

SEQUENCE LISTING

<110> Kelly, Louise M.  
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Healy, Aileen

<120> METHODS AND COMPOSITIONS FOR TREATING  
HEMATOLOGICAL DISORDERS USING 9118, 990, 17662, 81982, 630,  
21472, 17692, 19290, 21620, 21689, 28899, 53659, 64549,  
9465, 23544, 7366, 27417, 57259, 21844, 943, 2061, 5891,  
9137, 13908, 14310, 17600, 25584, 27824, 28469, 38947,  
53003, 965, 56639, 9661, 16052, 1521, 6662, 13913, 12405 OR  
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His Phe Met Pro Val Leu Gly Phe Gly Thr Tyr Ala Pro Pro Glu Val	
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ccg aga agt aaa gct ttg gag gtc aca aaa tta gca ata gaa gct ggg	145
Pro Arg Ser Lys Ala Leu Glu Val Thr Lys Leu Ala Ile Glu Ala Gly	
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Phe Arg His Ile Asp Ser Ala His Leu Tyr Asn Asn Glu Glu Gln Val	
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Gly Leu Ala Ile Arg Ser Lys Ile Ala Asp Gly Ser Val Glu Arg Glu	
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Asp Ile Phe Tyr Thr Ser Lys Leu Trp Ser Thr Phe His Arg Pro Glu	
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Leu Val Arg Pro Ala Leu Glu Asn Ser Leu Lys Lys Ala Gln Leu Asp	
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Tyr Val Asp Leu Tyr Leu Ile His Ser Pro Met Ser Leu Lys Pro Gly	
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Val Asp Leu Cys Thr Thr Trp Glu Ala Met Glu Lys Cys Lys Asp Ala	
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Gly Leu Ala Lys Ser Ile Gly Val Ser Asn Phe Asn Arg Arg Gln Leu	
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Glu Ile Ile Leu Asn Lys Pro Gly Leu Lys Tyr Lys Pro Val Cys Asn	
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Cys Lys Ser Lys Asp Ile Val Leu Val Ala Tyr Ser Ala Leu Gly Ser	
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Ile	Asp	Ser	Ala	His	Leu	Tyr	Asn	Asn	Glu	Glu	Gln	Val	Gly	Leu	Ala		
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Tyr	Thr	Ser	Lys	Leu	Trp	Ser	Thr	Phe	His	Arg	Pro	Glu	Leu	Val	Arg		
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Pro	Ala	Leu	Glu	Asn	Ser	Leu	Lys	Lys	Ala	Gln	Leu	Asp	Tyr	Val	Asp		
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Leu	Tyr	Leu	Ile	His	Ser	Pro	Met	Ser	Leu	Lys	Pro	Gly	Glu	Glu	Leu		
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Ser	Pro	Thr	Asp	Glu	Asn	Gly	Lys	Val	Ile	Phe	Asp	Ile	Val	Asp	Leu		
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Lys	Ser	Ile	Gly	Val	Ser	Asn	Phe	Asn	Arg	Arg	Gln	Leu	Glu	Ile	Ile		
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Leu	Asn	Lys	Pro	Gly	Leu	Lys	Tyr	Lys	Pro	Val	Cys	Asn	Gln	Val	Glu		
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gac cct gtt cac aga gtg gcc ctt gca gaa gcc tgt aga aaa cag gaa	485
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Glu Phe Asp Val Ala Asn Asn Gly Ser Ser Gln Ala Asn Lys Leu Ile	
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Lys Glu Glu Leu Gln Ser Gln Val Glu Leu Leu Asn Ser Phe Glu Lys	
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Gly Glu Val Trp Arg Ala Cys Ile Asp Ser Asn Glu Asp Gly Asp Leu	
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Ser Lys Ser Thr Val Leu Arg Asn Tyr Lys Glu Ala Gln Glu Tyr Gly	
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His Val Ala Ser Ile Ala Ala Gly His Phe Pro Glu Glu Pro Glu Arg	
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Asn Gly Val Ala Pro Gly Ala Gln Ile Leu Ser Ile Lys Ile Gly Asp	
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Ser Val Ile Gly Val Gly Ala Tyr Val Ser Pro Asp Met Met Val Ala	
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Ser Arg Gly Pro Ser Ala Asp Gly Ala Leu Gly Val Ser Ile Ser Ala	
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cca gga gga gcc att gct tct gtt cct aac tgg aca ctg aga ggg acg	1349
Pro Gly Gly Ala Ile Ala Ser Val Pro Asn Trp Thr Leu Arg Gly Thr	
430 435 440	
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Gln Leu Met Asn Gly Thr Ser Met Ser Ser Pro Asn Ala Cys Gly Gly	
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Ile Ala Leu Ile Leu Ser Gly Leu Lys Ala Asn Asn Ile Asp Tyr Thr	
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Val His Ser Val Arg Arg Ala Leu Glu Asn Thr Ala Val Lys Ala Asp	
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Asn Ile Glu Val Phe Ala Gln Gly His Gly Ile Ile Gln Val Asp Lys	
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gcc tat gac tac ctc gtt cag aat aca tca ttt gct aat aaa tta ggt	1589
Ala Tyr Asp Tyr Leu Val Gln Asn Thr Ser Phe Ala Asn Lys Leu Gly	
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Val Gln Val Ala Ala Pro Ser Asp His Gly Val Gly Ile Glu Pro Val	
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Pro	Glu	Gly	Ala	Thr	Trp	Ala	Glu	Val	Thr	Val	Cys	Ser	Cys	Ser	Ser		
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Gln	Thr	Leu	Arg	Pro	Val	Ser	Ala	Lys	Thr	Lys	Pro	Leu	Gly	Ser	Arg		
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Tyr	Asp	Gly	Arg	Gly	Val	Leu	Ile	Ala	Val	Leu	Asp	Thr	Gly	Val	Asp
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Val	Asp	Ile	Ile	Asp	Thr	Thr	Gly	Ser	Gly	Asp	Val	Asn	Thr	Ala	Thr
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Glu	Val	Glu	Pro	Lys	Asp	Gly	Glu	Ile	Val	Gly	Leu	Ser	Gly	Arg	Val
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Asn	Gly	Ser	Ser	Gln	Ala	Asn	Lys	Leu	Ile	Lys	Glu	Glu	Leu	Gln	Ser
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Gln	Val	Glu	Leu	Leu	Asn	Ser	Phe	Glu	Lys	Lys	Tyr	Ser	Asp	Pro	Gly
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Pro	Val	Tyr	Asp	Cys	Leu	Val	Trp	His	Asp	Gly	Glu	Val	Trp	Arg	Ala
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Cys	Ile	Asp	Ser	Asn	Glu	Asp	Gly	Asp	Leu	Ser	Lys	Ser	Thr	Val	Leu
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Met	Leu	Asn	Tyr	Ser	Val	Asn	Ile	Tyr	Asp	Asp	Arg	Asn	Leu	Leu	Ser
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Lys	Cys	Asp	Leu	Val	Asn	Tyr	Ser	Tyr	Gly	Glu	Ala	Thr	His	Trp	Pro
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Lys	Leu	Pro	Ala	Asn	Gln	Tyr	Thr	Trp	Ser	Ser	Arg	Gly	Pro	Ser	Ala
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Asp	Gly	Ala	Leu	Gly	Val	Ser	Ile	Ser	Ala	Pro	Gly	Gly	Ala	Ile	Ala
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Ser	Val	Pro	Asn	Trp	Thr	Leu	Arg	Gly	Thr	Gln	Leu	Met	Asn	Gly	Thr
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Ala	Leu	Glu	Asn	Thr	Ala	Val	Lys	Ala	Asp	Asn	Ile	Glu	Val	Phe	Ala
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Gln	Asn	Thr	Ser	Phe	Ala	Asn	Lys	Leu	Gly	Phe	Thr	Val	Thr	Val	Gly
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Asn	Asn	Arg	Gly	Ile	Tyr	Leu	Arg	Asp	Pro	Val	Gln	Val	Ala	Ala	Pro
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Ser	Asp	His	Gly	Val	Gly	Ile	Glu	Pro	Val	Phe	Pro	Glu	Asn	Thr	Glu
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Asn	Ser	Glu	Lys	Ile	Ser	Leu	Gln	Leu	His	Leu	Ala	Leu	Thr	Ser	Asn
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Ser	Ser	Trp	Val	Gln	Cys	Pro	Ser	His	Leu	Glu	Leu	Met	Asn	Gln	Cys
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His	Tyr	Thr	Glu	Val	Cys	Gly	Tyr	Asp	Ile	Ala	Ser	Pro	Asn	Ala	Gly
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Ala	Glu	Val	Thr	Val	Cys	Ser	Cys	Ser	Ser	Glu	Val	Ser	Ala	Lys	Phe
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Ala	Phe	Pro	Val	Leu	Gly	Gly	Lys	Ala	Ile	Glu	Phe	Cys	Ile	Ala	Arg
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His	Gly	Ile	Val	Cys	Thr	Ala	Pro	Gln	Leu	Asn	Ile	His	Ala	Ser	Glu
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Gly	Ile	Asn	Arg	Phe	Asp	Val	Gln	Ser	Ser	Leu	Lys	Tyr	Glu	Asp	Leu
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Ala	Pro	Cys	Ile	Thr	Leu	Lys	Asn	Trp	Val	Gln	Thr	Leu	Arg	Pro	Val
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Ser	Ala	Lys	Thr	Lys	Pro	Leu	Gly	Ser	Arg	Asp	Val	Leu	Pro	Asn	Asn
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Leu	Glu	Lys	Gly	Asp	Tyr	Thr	Ile	Arg	Leu	Gln	Ile	Arg	His	Glu	Gln
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Tyr	Asn	Gln	Pro	Phe	Phe	Val	Thr	Ser	Leu	Pro	Asp	Asp	Lys	Ile	Pro
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Lys	Gly	Ala	Gly	Pro	Gly	Cys	Tyr	Leu	Ala	Gly	Ser	Leu	Thr	Leu	Ser





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Pro Tyr Ile Glu Ala Gly Lys Ile Gln Lys Gly Arg Glu Leu Ser Leu	
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Val Gly Pro Phe Pro Gly Leu Asn Met Lys Ser Tyr Ala Gly Phe Leu	
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acc gtg aat aag act tac aac agc aac ctc ttc ttc tgg ttc ttc cca	351
Thr Val Asn Lys Thr Tyr Asn Ser Asn Leu Phe Phe Trp Phe Phe Pro	
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Ala Gln Ile Gln Pro Glu Asp Ala Pro Val Val Leu Trp Leu Gln Gly	
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Gly Pro Gly Gly Ser Ser Met Phe Gly Leu Phe Val Glu His Gly Pro	
115 120 125	
tat gtt gtc aca agt aac atg acc ttg cgt gac aga gac ttc ccc tgg	495
Tyr Val Val Thr Ser Asn Met Thr Leu Arg Asp Arg Asp Phe Pro Trp	
130 135 140	
acc aca acg ctc tcc atg ctt tac att gac aat cca gtg ggc aca ggc	543
Thr Thr Thr Leu Ser Met Leu Tyr Ile Asp Asn Pro Val Gly Thr Gly	
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Phe Ser Phe Thr Asp Asp Thr His Gly Tyr Ala Val Asn Glu Asp Asp	
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Val Ala Arg Asp Leu Tyr Ser Ala Leu Ile Gln Phe Phe Gln Ile Phe	
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Pro Glu Tyr Lys Asn Asn Asp Phe Tyr Val Thr Gly Glu Ser Tyr Ala	
195 200 205	
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Gly Lys Tyr Val Pro Ala Ile Ala His Leu Ile His Ser Leu Asn Pro	
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Val Arg Glu Val Lys Ile Asn Leu Asn Gly Ile Ala Ile Gly Asp Gly	
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Tyr Ser Asp Pro Glu Ser Ile Ile Gly Gly Tyr Ala Glu Phe Leu Tyr	
240 245 250	
caa att ggc ttg ttg gat gag aag caa aaa aag tac ttc cag aag cag	879
Gln Ile Gly Leu Leu Asp Glu Lys Gln Lys Lys Tyr Phe Gln Lys Gln	
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tgc cat gaa tgc ata gaa cac atc agg aag cag aac tgg ctt gag gcc	927
Cys His Glu Cys Ile Glu His Ile Arg Lys Gln Asn Trp Leu Glu Ala	
275 280 285	

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Phe Glu Ile Leu Asp Lys Leu Leu Asp Gly Asp Leu Thr Ser Asp Pro	
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Ser Tyr Phe Gln Asn Val Thr Gly Cys Ser Asn Tyr Tyr Asn Phe Leu	
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cgg tgc acg gaa cct gag gat cag ctt tac tat gtg aaa ttt ttg tca	1071
Arg Cys Thr Glu Pro Glu Asp Gln Leu Tyr Tyr Val Lys Phe Leu Ser	
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ctc cca gag gtg aga caa gcc atc cac gtg ggg aat cag act ttt aat	1119
Leu Pro Glu Val Arg Gln Ala Ile His Val Gly Asn Gln Thr Phe Asn	
335 340 345 350	
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Asp Gly Thr Ile Val Glu Lys Tyr Leu Arg Glu Asp Thr Val Gln Ser	
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Val Lys Pro Trp Leu Thr Glu Ile Met Asn Asn Tyr Lys Val Leu Ile	
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Tyr Asn Gly Gln Leu Asp Ile Ile Val Ala Ala Leu Thr Glu His	
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Ser Leu Met Gly Met Asp Trp Lys Gly Ser Gln Glu Tyr Lys Lys Ala	
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Glu Lys Lys Val Trp Lys Ile Leu Lys Ser Asp Ser Glu Val Ala Gly	
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Tyr Ile Arg Gln Ala Gly Asp Ser His Gln Val Ile Ile Arg Gly Gly	
435 440 445	
gga cat att tta ccc tat gac cag cct ctg aga gct ttt gac atg att	1455
Gly His Ile Leu Pro Tyr Asp Gln Pro Leu Arg Ala Phe Asp Met Ile	
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Asn Arg Phe Ile Tyr Gly Lys Gly Trp Asp Pro Tyr Val Gly *	
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Gly Ser Gly Phe Ile Val Ser Glu Asp Gly Leu Ile Ile Thr Asn Ala	
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His Val Val Arg Asn Gln Gln Trp Ile Glu Val Val Leu Gln Asn Gly	
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Ala Arg Tyr Glu Ala Val Val Lys Asp Ile Asp Leu Lys Leu Asp Leu	
235 240 245	
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Ala Val Ile Lys Ile Glu Ser Asn Ala Glu Leu Pro Val Leu Met Leu	
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Gly Arg Ser Ser Asp Leu Arg Ala Gly Glu Phe Val Val Ala Leu Gly	
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Ser Pro Phe Ser Leu Gln Asn Thr Ala Thr Ala Gly Ile Val Ser Thr	
285 290 295	
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Lys Gln Arg Gly Gly Lys Glu Leu Gly Met Lys Asp Ser Asp Met Asp	
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Tyr Val Gln Ile Asp Ala Thr Ile Asn Tyr Gly Asn Ser Gly Gly Pro	
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Leu Val Asn Leu Asp Gly Asp Val Ile Gly Val Asn Ser Leu Arg Val	
330 335 340 345	
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Thr Asp Gly Ile Ser Phe Ala Ile Pro Ser Asp Arg Val Arg Gln Phe	
350 355 360	
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365 370 375	
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Lys Lys Tyr Leu Gly Leu Gln Met Leu Ser Leu Thr Val Pro Leu Ser	
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Glu Glu Leu Lys Met His Tyr Pro Asp Phe Pro Asp Val Ser Ser Gly	
395 400 405	
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Val Tyr Val Cys Lys Val Val Glu Gly Thr Ala Ala Gln Ser Ser Gly	
410 415 420 425	
ttg aga gat cac gat gta att gtc aac ata aat ggg aaa cct att act	1409
Leu Arg Asp His Asp Val Ile Val Asn Ile Asn Gly Lys Pro Ile Thr	
430 435 440	
act aca act gat gtt gtt aaa gct ctt gac agt gat tcc ctt tcc atg	1457

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Lys	Leu	His	Thr	Gln	Pro	Ser	Cys	Pro	Ala	Val	Cys	Gln	Pro	Thr	Arg		
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Cys	Pro	Ala	Leu	Pro	Thr	Cys	Ala	Leu	Gly	Thr	Thr	Pro	Val	Phe	Asp		
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Leu	Cys	Arg	Cys	Cys	Arg	Val	Cys	Pro	Ala	Ala	Glu	Arg	Glu	Val	Cys		
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Glu	Asp	Gly	Leu	Ile	Ile	Thr	Asn	Ala	His	Val	Val	Arg	Asn	Gln	Gln		
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Trp	Ile	Glu	Val	Val	Leu	Gln	Asn	Gly	Ala	Arg	Tyr	Glu	Ala	Val	Val		
225					230					235					240		
Lys	Asp	Ile	Asp	Leu	Lys	Leu	Asp	Leu	Ala	Val	Ile	Lys	Ile	Glu	Ser		
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Asn	Ala	Glu	Leu	Pro	Val	Leu	Met	Leu	Gly	Arg	Ser	Ser	Asp	Leu	Arg		
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Thr	Ala	Thr	Ala	Gly	Ile	Val	Ser	Thr	Lys	Gln	Arg	Gly	Gly	Lys	Glu		
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Val	Ile	Gly	Val	Asn	Ser	Leu	Arg	Val	Thr	Asp	Gly	Ile	Ser	Phe	Ala		



95										100					105					
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Leu	Tyr	Tyr	Tyr	Gln	Ser	Gly	Gly	Arg	Ile	Arg	Arg	Pro	Val	Asn	Val					
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ccc	atc	gac	att	ttc	tcc	gag	gag	atc	cgc	ttc	tac	cag	ctg	ggc	gag	797				
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140					145					150					155					
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Glu	Arg	Pro	Leu	Pro	Arg	Arg	Asp	Phe	Gln	Arg	Gln	Val	Trp	Leu	Leu					
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Phe	Glu	Tyr	Pro	Glu	Ser	Ser	Gly	Pro	Ala	Arg	Gly	Ile	Ala	Ile	Val					
			175					180					185							
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Ser	Val	Leu	Val	Ile	Leu	Ile	Ser	Ile	Val	Ile	Phe	Cys	Leu	Glu	Thr					
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Leu	Pro	Glu	Phe	Arg	Asp	Glu	Lys	Asp	Tyr	Pro	Ala	Ser	Thr	Ser	Gln					
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gcc	tcc	agc	ttc	tcc	gat	ccc	ttc	ttc	gtg	gtg	gag	acg	ctg	tgc	atc	1133				
Ala	Ser	Ser	Phe	Ser	Asp	Pro	Phe	Phe	Val	Val	Glu	Thr	Leu	Cys	Ile					
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Ile	Trp	Phe	Ser	Phe	Glu	Leu	Leu	Val	Arg	Phe	Phe	Ala	Cys	Pro	Ser					
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Lys	Ala	Thr	Phe	Ser	Arg	Asn	Ile	Met	Asn	Leu	Ile	Asp	Ile	Val	Ala					
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Leu	Val	Arg	Val	Phe	Arg	Ile	Phe	Lys	Leu	Ser	Arg	His	Ser	Lys	Gly					
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ctg	cag	atc	ctc	ggg	caa	acg	ctg	aag	gcg	tcc	atg	cgg	gag	ctg	gga	1421				
Leu	Gln	Ile	Leu	Gly	Gln	Thr	Leu	Lys	Ala	Ser	Met	Arg	Glu	Leu	Gly					
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gtc tac ttt gcc gag gca gac gac ccc act tca ggt ttc agc agc atc	1517
Val Tyr Phe Ala Glu Ala Asp Asp Pro Thr Ser Gly Phe Ser Ser Ile	
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ccg gat gcc ttc tgg tgg gca gtg gta acc atg aca aca gtg ggt tac	1565
Pro Asp Ala Phe Trp Trp Ala Val Val Thr Met Thr Thr Val Gly Tyr	
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Gly Asp Met His Pro Val Thr Ile Gly Gly Lys Ile Val Gly Ser Leu	
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tgt gcc atc gcc ggt gtc ttg acc atc gca ttg cca gtt ccc gtg att	1661
Cys Ala Ile Ala Gly Val Leu Thr Ile Ala Leu Pro Val Pro Val Ile	
415 420 425	
gtt tcc aac ttc aat tac ttc tac cac cgg gag aca gaa ggg gaa gag	1709
Val Ser Asn Phe Asn Tyr Phe Tyr His Arg Glu Thr Glu Gly Glu Glu	
430 435 440	
caa tcc cag tac atg cac gtg gga agt tgc cag cac ctc tcc tct tca	1757
Gln Ser Gln Tyr Met His Val Gly Ser Cys Gln His Leu Ser Ser Ser	
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gcc gag gag ctc cga aaa gca agg agt aac tcg act ctg agt aag tcg	1805
Ala Glu Glu Leu Arg Lys Ala Arg Ser Asn Ser Thr Leu Ser Lys Ser	
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gag tat atg gtg atc gaa gag ggg ggt atg aac cat agc gct ttc ccc	1853
Glu Tyr Met Val Ile Glu Glu Gly Gly Met Asn His Ser Ala Phe Pro	
480 485 490	
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Gln Thr Pro Phe Lys Thr Gly Asn Ser Thr Ala Thr Cys Thr Thr Asn	
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Asn Asn Pro Asn Ser Cys Val Asn Ile Lys Lys Ile Phe Thr Asp Val	
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aacaaaaaat ttcctaattgc atctgagaga taagcttcgg cagtatcaca agaagattaa	2782

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<212> PRT
<213> Homo sapiens

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20      25      30
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35      40      45
Cys Cys Gly Glu Arg Val Val Ile Asn Ile Ser Gly Leu Arg Phe Glu
50      55      60
Thr Gln Leu Lys Thr Leu Cys Gln Phe Pro Glu Thr Leu Leu Gly Asp
65      70      75      80
Pro Lys Arg Arg Met Arg Tyr Phe Asp Pro Leu Arg Asn Glu Tyr Phe
85      90      95
Phe Asp Arg Asn Arg Pro Ser Phe Asp Ala Ile Leu Tyr Tyr Tyr Gln
100     105     110
Ser Gly Gly Arg Ile Arg Arg Pro Val Asn Val Pro Ile Asp Ile Phe
115     120     125
Ser Glu Glu Ile Arg Phe Tyr Gln Leu Gly Glu Glu Ala Met Glu Lys
130     135     140
Phe Arg Glu Asp Glu Gly Phe Leu Arg Glu Glu Glu Arg Pro Leu Pro
145     150     155     160
Arg Arg Asp Phe Gln Arg Gln Val Trp Leu Leu Phe Glu Tyr Pro Glu
165     170     175
Ser Ser Gly Pro Ala Arg Gly Ile Ala Ile Val Ser Val Leu Val Ile
180     185     190
Leu Ile Ser Ile Val Ile Phe Cys Leu Glu Thr Leu Pro Glu Phe Arg
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Asp Glu Lys Asp Tyr Pro Ala Ser Thr Ser Gln Asp Ser Phe Glu Ala
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225     230     235     240
Asp Pro Phe Phe Val Val Glu Thr Leu Cys Ile Ile Trp Phe Ser Phe
245     250     255
Glu Leu Leu Val Arg Phe Phe Ala Cys Pro Ser Lys Ala Thr Phe Ser
260     265     270
Arg Asn Ile Met Asn Leu Ile Asp Ile Val Ala Ile Ile Pro Tyr Phe
275     280     285
Ile Thr Leu Gly Thr Glu Leu Ala Glu Arg Gln Gly Asn Gly Gln Gln
290     295     300
Ala Met Ser Leu Ala Ile Leu Arg Val Ile Arg Leu Val Arg Val Phe
305     310     315     320
Arg Ile Phe Lys Leu Ser Arg His Ser Lys Gly Leu Gln Ile Leu Gly
325     330     335
Gln Thr Leu Lys Ala Ser Met Arg Glu Leu Gly Leu Leu Ile Phe Phe
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Asp Tyr Arg Glu Pro Ile Glu Val Asn Leu Phe Gly Leu Ile Ser Val	
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aca cta aat atg ctt cct ttg gtc aag aaa gct caa ggg aga gtt att	480
Thr Leu Asn Met Leu Pro Leu Val Lys Lys Ala Gln Gly Arg Val Ile	
145 150 155 160	
aat gtc tcc agt gtt gga ggt cgc ctt gca atc gtt gga ggg ggc tat	528
Asn Val Ser Ser Val Gly Gly Arg Leu Ala Ile Val Gly Gly Gly Tyr	
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Thr Pro Ser Lys Tyr Ala Val Glu Gly Phe Asn Asp Ser Leu Arg Arg	
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Asp Met Lys Ala Phe Gly Val His Val Ser Cys Ile Glu Pro Gly Leu	
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Phe Lys Thr Asn Leu Ala Asp Pro Val Lys Val Ile Glu Lys Lys Leu	
210 215 220	
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Ala Ile Trp Glu Gln Leu Ser Pro Asp Ile Lys Gln Gln Tyr Gly Glu	
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Gly Tyr Ile Glu Lys Ser Leu Asp Lys Leu Lys Gly Asn Lys Ser Tyr	
245 250 255	
gtg aac atg gac ctc tct ccg gtg gta gag tgc atg gac cac gct cta	816
Val Asn Met Asp Leu Ser Pro Val Val Glu Cys Met Asp His Ala Leu	
260 265 270	
aca agt ctc ttc cct aag act cat tat gcc gct gga aaa gat gcc aaa	864
Thr Ser Leu Phe Pro Lys Thr His Tyr Ala Ala Gly Lys Asp Ala Lys	
275 280 285	
att ttc tgg ata cct ctg tct cac atg cca gca gct ttg caa gac ttt	912
Ile Phe Trp Ile Pro Leu Ser His Met Pro Ala Ala Leu Gln Asp Phe	
290 295 300	
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 <212> PRT  
 <213> Homo sapiens

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Phe	Ile	Thr	Gly	Cys	Asp	Ser	Gly	Phe	Gly	Asn	Leu	Ala	Ala	Arg	Thr
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Leu	Leu	Asp	Val	Thr	Asp	Pro	Glu	Asn	Val	Lys	Arg	Thr	Ala	Gln	Trp
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Val	Lys	Asn	Gln	Val	Gly	Glu	Lys	Gly	Leu	Trp	Gly	Leu	Ile	Asn	Asn
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Ala	Gly	Val	Pro	Gly	Val	Leu	Ala	Pro	Thr	Asp	Trp	Leu	Thr	Leu	Glu
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Asp	Tyr	Arg	Glu	Pro	Ile	Glu	Val	Asn	Leu	Phe	Gly	Leu	Ile	Ser	Val
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Thr	Leu	Asn	Met	Leu	Pro	Leu	Val	Lys	Lys	Ala	Gln	Gly	Arg	Val	Ile
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Asn	Val	Ser	Ser	Val	Gly	Gly	Arg	Leu	Ala	Ile	Val	Gly	Gly	Gly	Tyr
				165					170					175	
Thr	Pro	Ser	Lys	Tyr	Ala	Val	Glu	Gly	Phe	Asn	Asp	Ser	Leu	Arg	Arg
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225					230					235					240
Gly	Tyr	Ile	Glu	Lys	Ser	Leu	Asp	Lys	Leu	Lys	Gly	Asn	Lys	Ser	Tyr
				245					250					255	
Val	Asn	Met	Asp	Leu	Ser	Pro	Val	Val	Glu	Cys	Met	Asp	His	Ala	Leu
			260					265					270		
Thr	Ser	Leu	Phe	Pro	Lys	Thr	His	Tyr	Ala	Ala	Gly	Lys	Asp	Ala	Lys
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Ile	Phe	Trp	Ile	Pro	Leu	Ser	His	Met	Pro	Ala	Ala	Leu	Gln	Asp	Phe
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<211> 2205

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

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Pro	Ala	Leu	Gly	Ala	Pro	Arg	Asn	Ser	Val	Leu	Gly	Leu	Ala	Gln	Pro	
			20					25					30			

ggg	acc	acc	aag	gtc	cca	ggc	tcg	acc	ccg	gcc	ctg	cat	agc	agc	ccg	144
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Gly	Thr	Thr	Lys	Val	Pro	Gly	Ser	Thr	Pro	Ala	Leu	His	Ser	Ser	Pro		
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Ala	Gln	Pro	Pro	Ala	Glu	Thr	Ala	Asn	Gly	Thr	Ser	Glu	Gln	His	Val		
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Arg	Ile	Arg	Val	Ile	Lys	Lys	Lys	Lys	Val	Ile	Met	Lys	Lys	Arg	Lys		
	65				70				75						80		
aag	cta	act	cta	act	cgc	ccc	acc	cca	ctg	gtg	act	gcc	ggg	ccc	ctt	288	
Lys	Leu	Thr	Leu	Thr	Arg	Pro	Thr	Pro	Leu	Val	Thr	Ala	Gly	Pro	Leu		
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gtg	acc	ccc	act	cca	gca	ggg	acc	ctc	gac	ccc	gct	gag	aaa	caa	gaa	336	
Val	Thr	Pro	Thr	Pro	Ala	Gly	Thr	Leu	Asp	Pro	Ala	Glu	Lys	Gln	Glu		
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Gly	Arg	Leu	Asn	Ile	Gln	Ser	Gly	Leu	Glu	Asp	Gly	Asp	Leu	Tyr	Asp		
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Gly	Ala	Trp	Cys	Ala	Glu	Glu	Gln	Asp	Ala	Asp	Pro	Trp	Phe	Gln	Val		
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Asp	Ala	Gly	His	Pro	Thr	Arg	Phe	Ser	Gly	Val	Ile	Thr	Gln	Gly	Arg		
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Asn	Ser	Val	Trp	Arg	Tyr	Asp	Trp	Val	Thr	Ser	Tyr	Lys	Val	Gln	Phe		
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Ser	Asn	Asp	Ser	Arg	Thr	Trp	Trp	Gly	Ser	Arg	Asn	His	Ser	Ser	Gly		
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Asn	Leu	Leu	Pro	Glu	Pro	Gln	Val	Ala	Arg	Phe	Ile	Arg	Leu	Leu	Pro		
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Gln	Thr	Trp	Leu	Gln	Gly	Gly	Ala	Pro	Cys	Leu	Arg	Ala	Glu	Ile	Leu		
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ccc act tac tac acc ctg ccc aat gcc acc gtg gct cct gaa acg cgg Pro Thr Tyr Tyr Thr Leu Pro Asn Ala Thr Val Ala Pro Glu Thr Arg 465 470 475 480			1440
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Phe Arg Trp Leu Ser Thr Val Tyr Ala Gly Ser Asn Leu Ala Met Gln	
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gac acc agc cgc cga ccc tgc cac agc cag gac ttc tcc gtg cac ggc	1680
Asp Thr Ser Arg Arg Pro Cys His Ser Gln Asp Phe Ser Val His Gly	
545 550 555 560	
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Asn Ile Ile Asn Gly Ala Asp Trp His Thr Val Pro Gly Ser Met Asn	
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gac ttc agc tac cta cac acc aac tgc ttt gag gtc act gtg gag ctg	1776
Asp Phe Ser Tyr Leu His Thr Asn Cys Phe Glu Val Thr Val Glu Leu	
580 585 590	
tcc tgt gac aag ttc cct cac gag aat gaa ttg ccc cag gag tgg gag	1824
Ser Cys Asp Lys Phe Pro His Glu Asn Glu Leu Pro Gln Glu Trp Glu	
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Asn Asn Lys Asp Ala Leu Leu Thr Tyr Leu Glu Gln Val Arg Met Gly	
610 615 620	
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Ile Ala Gly Val Val Arg Asp Lys Asp Thr Glu Leu Gly Ile Ala Asp	
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Ala Val Ile Ala Val Asp Gly Ile Asn His Asp Val Thr Thr Ala Trp	
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Gly Gly Asp Tyr Trp Arg Leu Leu Thr Pro Gly Asp Tyr Met Val Thr	
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Ala Ser Ala Glu Gly Tyr His Ser Val Thr Arg Asn Cys Arg Val Thr	
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Phe Glu Glu Gly Pro Phe Pro Cys Asn Phe Val Leu Thr Lys Thr Pro	
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Lys Gln Arg Leu Arg Glu Leu Leu Ala Ala Gly Ala Lys Val Pro Pro	
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<211> 734

<212> PRT

<213> Homo sapiens

<400> 14



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Gly	Thr	Thr	Lys	Val	Pro	Gly	Ser	Thr	Pro	Ala	Leu	His	Ser	Ser	Pro
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Ala	Gln	Pro	Pro	Ala	Glu	Thr	Ala	Asn	Gly	Thr	Ser	Glu	Gln	His	Val
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Arg	Ile	Arg	Val	Ile	Lys	Lys	Lys	Lys	Val	Ile	Met	Lys	Lys	Arg	Lys
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Lys	Leu	Thr	Leu	Thr	Arg	Pro	Thr	Pro	Leu	Val	Thr	Ala	Gly	Pro	Leu
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Val	Thr	Pro	Thr	Pro	Ala	Gly	Thr	Leu	Asp	Pro	Ala	Glu	Lys	Gln	Glu
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Gly	Ala	Trp	Cys	Ala	Glu	Glu	Gln	Asp	Ala	Asp	Pro	Trp	Phe	Gln	Val
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Asn	Leu	Leu	Pro	Glu	Pro	Gln	Val	Ala	Arg	Phe	Ile	Arg	Leu	Leu	Pro
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Gln	Thr	Trp	Leu	Gln	Gly	Gly	Ala	Pro	Cys	Leu	Arg	Ala	Glu	Ile	Leu
			260					265					270		
Ala	Cys	Pro	Val	Ser	Asp	Pro	Asn	Asp	Leu	Phe	Leu	Glu	Ala	Pro	Ala
		275					280					285			
Ser	Gly	Ser	Ser	Asp	Pro	Leu	Asp	Phe	Gln	His	His	Asn	Tyr	Lys	Ala
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Arg	Ile	Tyr	Ser	Ile	Gly	Lys	Ser	Tyr	Gln	Gly	Leu	Lys	Leu	Tyr	Val
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Met	Glu	Met	Ser	Asp	Lys	Pro	Gly	Glu	His	Glu	Leu	Gly	Glu	Pro	Glu
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Val	Arg	Tyr	Val	Ala	Gly	Met	His	Gly	Asn	Glu	Ala	Leu	Gly	Arg	Glu
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Pro	Ser	Met	Asn	Pro	Asp	Gly	Tyr	Glu	Ile	Ala	Tyr	His	Arg	Gly	Ser
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Glu	Leu	Val	Gly	Trp	Ala	Glu	Gly	Arg	Trp	Asn	Asn	Gln	Ser	Ile	Asp
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Pro	Thr	Tyr	Tyr	Thr	Leu	Pro	Asn	Ala	Thr	Val	Ala	Pro	Glu	Thr	Arg
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Ala	Val	Ile	Lys	Trp	Met	Lys	Arg	Ile	Pro	Phe	Val	Leu	Ser	Ala	Asn



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acc cgc tac ccc acg gtc aaa cag atc cgc aag ctg agg cag ctg cac Thr Arg Tyr Pro Thr Val Lys Gln Ile Arg Lys Leu Arg Gln Leu His 95 100 105			340
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gcg gac tgg atg gac ggg cag cta gta gag aag gga cgg cag gat atg Ala Asp Trp Met Asp Gly Gln Leu Val Glu Lys Gly Arg Gln Asp Met 140 145 150			484
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tct cct tgg tgt gat gtt ttt gac ata gat gat gca aag gta tta gaa Ser Pro Trp Cys Asp Val Phe Asp Ile Asp Asp Ala Lys Val Leu Glu 300 305 310			964

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Tyr Leu Asn Asp Leu Lys Gln Tyr Trp Lys Arg Gly Tyr Gly Tyr Thr	
315 / 320 325 330	
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Ile Asn Ser Arg Ser Ser Cys Thr Leu Phe Gln Asp Ile Ser Gln His	
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Leu Asp Lys Ala Val Glu Gln Lys Gln Arg Ser Gln Pro Ile Ser Ser	
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Pro Val Ile Leu Gln Phe Gly His Ala Glu Thr Leu Leu Pro Leu Leu	
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Ser Leu Met Gly Tyr Phe Lys Asp Lys Glu Pro Leu Thr Ala Tyr Asn	
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Tyr Lys Lys Gln Met His Arg Lys Phe Arg Ser Gly Leu Ile Val Pro	
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Tyr Ala Ser Asn Leu Ile Phe Val Leu Tyr His Cys Glu Asn Ala Lys	
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Thr Pro Lys Glu Gln Phe Arg Val Gln Met Leu Leu Asn Glu Lys Val	
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Leu Pro Leu Ala Tyr Ser Gln Glu Thr Val Ser Phe Tyr Glu Asp Leu	
445 450 455	
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Lys Asn His Tyr Lys Asp Ile Leu Gln Ser Cys Gln Thr Ser Glu Glu	
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Cys Glu Leu Ala Arg Ala Asn Ser Thr Ser Asp Glu Leu *	
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 Thr Lys Thr Arg Tyr Glu Asp Val Asn Pro Val Leu Leu Ser Gly Pro  
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 Glu Ala Pro Trp Arg Asp Pro Glu Leu Leu Glu Gly Thr Cys Thr Pro  
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 Ala Gln Leu Val Ala Leu Ile Arg His Gly Thr Arg Tyr Pro Thr Val  
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 Lys Gln Ile Arg Lys Leu Arg Gln Leu His Gly Leu Leu Gln Ala Arg  
 100 105 110  
 Gly Ser Arg Asp Gly Gly Ala Ser Ser Thr Gly Ser Arg Asp Leu Gly  
 115 120 125  
 Ala Ala Leu Ala Asp Trp Pro Leu Trp Tyr Ala Asp Trp Met Asp Gly  
 130 135 140  
 Gln Leu Val Glu Lys Gly Arg Gln Asp Met Arg Gln Leu Ala Leu Arg  
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 Leu Arg Leu Ile Thr Ser Ser Lys His Arg Cys Met Asp Ser Ser Ala  
 180 185 190  
 Ala Phe Leu Gln Gly Leu Trp Gln His Tyr His Pro Gly Leu Pro Pro  
 195 200 205  
 Pro Asp Val Ala Asp Met Glu Phe Gly Pro Pro Thr Val Asn Asp Lys  
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 Leu Met Arg Phe Phe Asp His Cys Glu Lys Phe Leu Thr Glu Val Glu  
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 Lys Asn Ala Thr Ala Leu Tyr His Val Glu Ala Phe Lys Thr Gly Pro  
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 Glu Met Gln Asn Ile Leu Lys Lys Val Ala Ala Thr Leu Gln Val Pro  
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 Val Asn Asp Leu Asn Ala Asp Leu Ile Gln Val Ala Phe Phe Thr Cys  
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 Cys Thr Leu Phe Gln Asp Ile Ser Gln His Leu Asp Lys Ala Val Glu  
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 Gln Lys Gln Arg Ser Gln Pro Ile Ser Ser Pro Val Ile Leu Gln Phe  
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 Gly His Ala Glu Thr Leu Leu Pro Leu Leu Ser Leu Met Gly Tyr Phe  
 370 375 380  
 Lys Asp Lys Glu Pro Leu Thr Ala Tyr Asn Tyr Lys Lys Gln Met His  
 385 390 395 400  
 Arg Lys Phe Arg Ser Gly Leu Ile Val Pro Tyr Ala Ser Asn Leu Ile  
 405 410 415  
 Phe Val Leu Tyr His Cys Glu Asn Ala Lys Thr Pro Lys Glu Gln Phe  
 420 425 430

Arg Val Gln Met Leu Leu Asn Glu Lys Val Leu Pro Leu Ala Tyr Ser  
435 440 445  
Gln Glu Thr Val Ser Phe Tyr Glu Asp Leu Lys Asn His Tyr Lys Asp  
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Asn Ser Thr Ser Asp Glu Leu  
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Met Ala Arg Pro Gly Met Glu Arg Trp Arg Asp Arg Leu Ala Leu Val  
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Thr Gly Ala Ser Gly Gly Ile Gly Ala Ala Val Ala Arg Ala Leu Val  
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Gln Gln Gly Leu Lys Val Val Gly Cys Ala Arg Thr Val Gly Asn Ile  
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Ile Pro Tyr Arg Cys Asp Leu Ser Asn Glu Glu Asp Ile Leu Ser Met  
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100 105 110  
  
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His Ile Ile Asn Ile Asn Ser Met Ser Gly His Arg Val Leu Pro Leu			
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Ser Val Thr His Phe Tyr Ser Ala Thr Lys Tyr Ala Val Thr Ala Leu			
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aca gag gga ctg agg caa gag ctt cgg gag gcc cag acc cac atc cga			996
Thr Glu Gly Leu Arg Gln Glu Leu Arg Glu Ala Gln Thr His Ile Arg			
	180	185	190
gcc acg tgc atc tct cca ggt gtg gtg gag aca caa ttc gcc ttc aaa			1044
Ala Thr Cys Ile Ser Pro Gly Val Val Glu Thr Gln Phe Ala Phe Lys			
	195	200	205
ctc cac gac aag gac cct gag aag gca gct gcc acc tat gag caa atg			1092
Leu His Asp Lys Asp Pro Glu Lys Ala Ala Ala Thr Tyr Glu Gln Met			
	210	215	220
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Lys Cys Leu Lys Pro Glu Asp Val Ala Glu Ala Val Ile Tyr Val Leu			
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agc act ccc gca cac atc cag att gga gac atc cag atg agg ccc acg			1188
Ser Thr Pro Ala His Ile Gln Ile Gly Asp Ile Gln Met Arg Pro Thr			
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Glu Gln Val Thr *			
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Ile	Pro	Tyr	Arg	Cys	Asp	Leu	Ser	Asn	Glu	Glu	Asp	Ile	Leu	Ser	Met
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Phe	Ser	Ala	Ile	Arg	Ser	Gln	His	Ser	Gly	Val	Asp	Ile	Cys	Ile	Asn
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Asn	Ala	Gly	Leu	Ala	Arg	Pro	Asp	Thr	Leu	Leu	Ser	Gly	Ser	Thr	Ser
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Gly	Trp	Lys	Asp	Met	Phe	Asn	Val	Asn	Val	Leu	Ala	Leu	Ser	Ile	Cys
		115					120					125			
Thr	Arg	Glu	Ala	Tyr	Gln	Ser	Met	Lys	Glu	Arg	Asn	Val	Asp	Asp	Gly
	130					135						140			
His	Ile	Ile	Asn	Ile	Asn	Ser	Met	Ser	Gly	His	Arg	Val	Leu	Pro	Leu
145					150					155					160
Ser	Val	Thr	His	Phe	Tyr	Ser	Ala	Thr	Lys	Tyr	Ala	Val	Thr	Ala	Leu
				165					170					175	
Thr	Glu	Gly	Leu	Arg	Gln	Glu	Leu	Arg	Glu	Ala	Gln	Thr	His	Ile	Arg
		180						185					190		
Ala	Thr	Cys	Ile	Ser	Pro	Gly	Val	Val	Glu	Thr	Gln	Phe	Ala	Phe	Lys
		195					200					205			
Leu	His	Asp	Lys	Asp	Pro	Glu	Lys	Ala	Ala	Ala	Thr	Tyr	Glu	Gln	Met
	210					215					220				
Lys	Cys	Leu	Lys	Pro	Glu	Asp	Val	Ala	Glu	Ala	Val	Ile	Tyr	Val	Leu
225					230					235					240
Ser	Thr	Pro	Ala	His	Ile	Gln	Ile	Gly	Asp	Ile	Gln	Met	Arg	Pro	Thr
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 <212> DNA  
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<220>  
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 <222> (340)...(1839)

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 ccaaattcaa acagctgttt tcagaggctg gagggcgggc ggactggtag cagctggggc 300  
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 Met Val Asp Arg Gly  
 1 5  
  
 cct ctg ctc acc tcg gcc atc atc ttc tac ctg gcc atc ggg gcg gcg 402  
 Pro Leu Leu Thr Ser Ala Ile Ile Phe Tyr Leu Ala Ile Gly Ala Ala  
 10 15 20  
  
 atc ttc gaa gtg ctg gag gag cca cac tgg aag gag gcc aag aaa aac 450  
 Ile Phe Glu Val Leu Glu Glu Pro His Trp Lys Glu Ala Lys Lys Asn  
 25 30 35  
  
 tac tac aca cag aag ctg cat ctg ctc aag gag ttc ccg tgc ctg ggt 498  
 Tyr Tyr Thr Gln Lys Leu His Leu Leu Lys Glu Phe Pro Cys Leu Gly



40	45	50	
cag gag ggc ctg gac aag atc cta gag gtg gta tct gat gct gca gga Gln Glu Gly Leu Asp Lys Ile Leu Glu Val Val Ser Asp Ala Ala Gly 55 60 65			546
cag ggt gtg gcc atc aca ggg aac cag acc ttc aac aac tgg aac tgg Gln Gly Val Ala Ile Thr Gly Asn Gln Thr Phe Asn Asn Trp Asn Trp 70 75 80 85			594
ccc aat gca atg att ttt gca gcg acc gtc att acc acc att gga tat Pro Asn Ala Met Ile Phe Ala Ala Thr Val Ile Thr Thr Ile Gly Tyr 90 95 100			642
ggc aat gtg gct ccc aag acc ccc gcc ggt cgc ctc ttc tgt gtt ttc Gly Asn Val Ala Pro Lys Thr Pro Ala Gly Arg Leu Phe Cys Val Phe 105 110 115			690
tat ggt ctc ttc ggg gtg ccg ctc tgc ctg acg tgg atc agt gcc ctg Tyr Gly Leu Phe Gly Val Pro Leu Cys Leu Thr Trp Ile Ser Ala Leu 120 125 130			738
ggc aag ttc ttc ggg gga cgt gcc aag aga cta ggg cag ttc ctt acc Gly Lys Phe Phe Gly Gly Arg Ala Lys Arg Leu Gly Gln Phe Leu Thr 135 140 145			786
aag aga ggt gtg agt ctg cgg aag gcg cag atc acg tgc aca gtc atc Lys Arg Gly Val Ser Leu Arg Lys Ala Gln Ile Thr Cys Thr Val Ile 150 155 160 165			834
ttc atc gtg tgg ggc gtc cta gtc cac ctg gtg atc cca ccc ttc gta Phe Ile Val Trp Gly Val Leu Val His Leu Val Ile Pro Pro Phe Val 170 175 180			882
ttc atg gtg act gag ggg tgg aac tac atc gag ggc ctc tac tac tcc Phe Met Val Thr Glu Gly Trp Asn Tyr Ile Glu Gly Leu Tyr Tyr Ser 185 190 195			930
ttc atc acc atc tcc acc atc ggc ttc ggt gac ttt gtg gcc ggt gtg Phe Ile Thr Ile Ser Thr Ile Gly Phe Gly Asp Phe Val Ala Gly Val 200 205 210			978
aac ccc agc gcc aac tac cac gcc ctg tac cgc tac ttc gtg gag ctc Asn Pro Ser Ala Asn Tyr His Ala Leu Tyr Arg Tyr Phe Val Glu Leu 215 220 225			1026
tgg atc tac ttg ggg ctg gcc tgg ctg tcc ctt ttt gtc aac tgg aag Trp Ile Tyr Leu Gly Leu Ala Trp Leu Ser Leu Phe Val Asn Trp Lys 230 235 240 245			1074
gtg agc atg ttt gtg gaa gtc cac aaa gcc att aag aag cgg cgg cgg Val Ser Met Phe Val Glu Val His Lys Ala Ile Lys Lys Arg Arg Arg 250 255 260			1122
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ctt tcc aag aag gaa gag acc tac aac gac ctc atc aag cag atc ggg	1266
Leu Ser Lys Lys Glu Glu Thr Tyr Asn Asp Leu Ile Lys Gln Ile Gly	
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Lys Lys Ala Met Lys Thr Ser Gly Gly Gly Glu Thr Gly Pro Gly Pro	
310 315 320 325	
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Gly Leu Gly Pro Gln Gly Gly Gly Leu Pro Ala Leu Pro Pro Ser Leu	
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Val Pro Leu Val Val Tyr Ser Lys Asn Arg Val Pro Thr Leu Glu	
345 350 355	
gtg tca cag aca ctg agg agc aaa ggc cac gta tca agg tcc cca gat	1458
Val Ser Gln Thr Leu Arg Ser Lys Gly His Val Ser Arg Ser Pro Asp	
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Glu Glu Ala Val Ala Arg Ala Pro Glu Asp Ser Ser Pro Ala Pro Glu	
375 380 385	
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Val Phe Met Asn Gln Leu Asp Arg Ile Ser Glu Glu Cys Glu Pro Trp	
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Asp Ala Gln Asp Tyr His Pro Leu Ile Phe Gln Asp Ala Ser Ile Thr	
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Phe Val Asn Thr Glu Ala Gly Leu Ser Asp Glu Glu Thr Ser Lys Ser	
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Ser Leu Glu Asp Asn Leu Ala Gly Glu Glu Ser Pro Gln Gln Gly Ala	
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gaa gcc aag gcg ccc ctg aac atg ggc gag ttc ccc tcc tcc tcc gag	1746
Glu Ala Lys Ala Pro Leu Asn Met Gly Glu Phe Pro Ser Ser Ser Glu	
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Ser Thr Phe Thr Ser Thr Glu Ser Glu Leu Ser Val Pro Tyr Glu Gln	
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ctg atg aat gag tac aac aag gct aac agc ccc aag ggc aca tga	1839
Leu Met Asn Glu Tyr Asn Lys Ala Asn Ser Pro Lys Gly Thr *	
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<210> 20

<211> 499

<212> PRT

<213> Homo sapiens

<400> 20

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Glu Ala Lys Lys Asn Tyr Tyr Thr Gln Lys Leu His Leu Leu Lys Glu
          35          40          45
Phe Pro Cys Leu Gly Gln Glu Gly Leu Asp Lys Ile Leu Glu Val Val
          50          55          60
Ser Asp Ala Ala Gly Gln Gly Val Ala Ile Thr Gly Asn Gln Thr Phe
          65          70          75          80
Asn Asn Trp Asn Trp Pro Asn Ala Met Ile Phe Ala Ala Thr Val Ile
          85          90          95
Thr Thr Ile Gly Tyr Gly Asn Val Ala Pro Lys Thr Pro Ala Gly Arg
          100          105          110
Leu Phe Cys Val Phe Tyr Gly Leu Phe Gly Val Pro Leu Cys Leu Thr
          115          120          125
Trp Ile Ser Ala Leu Gly Lys Phe Phe Gly Gly Arg Ala Lys Arg Leu
          130          135          140
Gly Gln Phe Leu Thr Lys Arg Gly Val Ser Leu Arg Lys Ala Gln Ile
          145          150          155          160
Thr Cys Thr Val Ile Phe Ile Val Trp Gly Val Leu Val His Leu Val
          165          170          175
Ile Pro Pro Phe Val Phe Met Val Thr Glu Gly Trp Asn Tyr Ile Glu
          180          185          190
Gly Leu Tyr Tyr Ser Phe Ile Thr Ile Ser Thr Ile Gly Phe Gly Asp
          195          200          205
Phe Val Ala Gly Val Asn Pro Ser Ala Asn Tyr His Ala Leu Tyr Arg
          210          215          220
Tyr Phe Val Glu Leu Trp Ile Tyr Leu Gly Leu Ala Trp Leu Ser Leu
          225          230          235          240
Phe Val Asn Trp Lys Val Ser Met Phe Val Glu Val His Lys Ala Ile
          245          250          255
Lys Lys Arg Arg Arg Arg Arg Lys Glu Ser Phe Glu Ser Ser Pro His
          260          265          270

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Ser Arg Lys Ala Leu Gln Val Lys Gly Ser Thr Ala Ser Lys Asp Val  
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 Asn Ile Phe Ser Phe Leu Ser Lys Lys Glu Glu Thr Tyr Asn Asp Leu  
 290 295 300  
 Ile Lys Gln Ile Gly Lys Lys Ala Met Lys Thr Ser Gly Gly Gly Glu  
 305 310 315 320  
 Thr Gly Pro Gly Pro Gly Leu Gly Pro Gln Gly Gly Gly Leu Pro Ala  
 325 330 335  
 Leu Pro Pro Ser Leu Val Pro Leu Val Val Tyr Ser Lys Asn Arg Val  
 340 345 350  
 Pro Thr Leu Glu Glu Val Ser Gln Thr Leu Arg Ser Lys Gly His Val  
 355 360 365  
 Ser Arg Ser Pro Asp Glu Glu Ala Val Ala Arg Ala Pro Glu Asp Ser  
 370 375 380  
 Ser Pro Ala Pro Glu Val Phe Met Asn Gln Leu Asp Arg Ile Ser Glu  
 385 390 395 400  
 Glu Cys Glu Pro Trp Asp Ala Gln Asp Tyr His Pro Leu Ile Phe Gln  
 405 410 415  
 Asp Ala Ser Ile Thr Phe Val Asn Thr Glu Ala Gly Leu Ser Asp Glu  
 420 425 430  
 Glu Thr Ser Lys Ser Ser Leu Glu Asp Asn Leu Ala Gly Glu Glu Ser  
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 Pro Gln Gln Gly Ala Glu Ala Lys Ala Pro Leu Asn Met Gly Glu Phe  
 450 455 460  
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 Lys Gly Thr

<210> 21  
 <211> 1832  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (192)...(1322)

<221> misc\_feature  
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 ggctctgctg acctgtgcc ttggacggct gtcctcagcg aggggccgtg caccgctcc 180  
 tgagcagcgc c atg ggc ctg ctg gcc ttc ctg aag acc cag ttc gtg ctg 230  
 Met Gly Leu Leu Ala Phe Leu Lys Thr Gln Phe Val Leu  
 1 5 10  
 cac ctg ctg gtc ggc ttt gtc ttc gtg gtg agt ggt ctg gtc atc aac 278  
 His Leu Leu Val Gly Phe Val Phe Val Val Ser Gly Leu Val Ile Asn  
 15 20 25  
 ttc gtc cag ctg tgc acg ctg gcg ctc tgg ccg gtc agc aag cag ctc 326  
 Phe Val Gln Leu Cys Thr Leu Ala Leu Trp Pro Val Ser Lys Gln Leu  
 30 35 40 45

tac cgc cgc ctc aac tgc cgc ctc gcc tac tca ctc tgg agc caa ctg	374
Tyr Arg Arg Leu Asn Cys Arg Leu Ala Tyr Ser Leu Trp Ser Gln Leu	
50 55 60	
gtc atg ctg ctg gag tgg tgg tcc tgc acg gag tgt aca ctg ttc acg	422
Val Met Leu Leu Glu Trp Trp Ser Cys Thr Glu Cys Thr Leu Phe Thr	
65 70 75	
gac cag gcc acg gta gag cgc ttt ggg aag gag cac gca gtc atc atc	470
Asp Gln Ala Thr Val Glu Arg Phe Gly Lys Glu His Ala Val Ile Ile	
80 85 90	
ctc aac cac aac ttc gag atc gag ttc ctc tgt ggg tgg acc atg tgt	518
Leu Asn His Asn Phe Glu Ile Asp Phe Leu Cys Gly Trp Thr Met Cys	
95 100 105	
gag cgc ttc gga gtg ctg ggg agc tcc aag gtc ctc gct aag aaa gag	566
Glu Arg Phe Gly Val Leu Gly Ser Ser Lys Val Leu Ala Lys Lys Glu	
110 115 120 125	
ctg ctc tac gtg ccc ctc atc ggc tgg acg tgg tac ttt ctg gag att	614
Leu Leu Tyr Val Pro Leu Ile Gly Trp Thr Trp Tyr Phe Leu Glu Ile	
130 135 140	
gtg ttc tgc aag cgg aag tgg aag gag gac cgg gac acc gtg gtc gaa	662
Val Phe Cys Lys Arg Lys Trp Lys Glu Asp Arg Asp Thr Val Val Glu	
145 150 155	
ggg ctg agg cgc ctg tcg gac tac ccc gag tac atg tgg ttt ctc ctg	710
Gly Leu Arg Arg Leu Ser Asp Tyr Pro Glu Tyr Met Trp Phe Leu Leu	
160 165 170	
tac tgc gag ggg acg cgc ttc acg gag acc aag cac cgc gtt agc atg	758
Tyr Cys Glu Gly Thr Arg Phe Thr Glu Thr Lys His Arg Val Ser Met	
175 180 185	
gag gtg gcg gct gct aag ggg ctt cct gtc ctc aag tac cac ctg ctg	806
Glu Val Ala Ala Ala Lys Gly Leu Pro Val Leu Lys Tyr His Leu Leu	
190 195 200 205	
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Pro Arg Thr Lys Gly Phe Thr Thr Ala Val Lys Cys Leu Arg Gly Thr	
210 215 220	
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Val Ala Ala Val Tyr Asp Val Thr Leu Asn Phe Arg Gly Asn Lys Asn	
225 230 235	
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Pro Ser Leu Leu Gly Ile Leu Tyr Gly Lys Lys Tyr Glu Ala Asp Met	
240 245 250	
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Cys Val Arg Arg Phe Pro Leu Glu Asp Ile Pro Leu Asp Glu Lys Glu	
255 260 265	
gca gct cag tgg ctt cat aaa ctg tac cag gag aag gac gcg ctc cag	1046
Ala Ala Gln Trp Leu His Lys Leu Tyr Gln Glu Lys Asp Ala Leu Gln	
270 275 280 285	
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Glu	Ile	Tyr	Asn	Gln	Lys	Gly	Met	Phe	Pro	Gly	Glu	Gln	Phe	Lys	Pro	
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Ala	Arg	Arg	Pro	Trp	Thr	Leu	Leu	Asn	Phe	Leu	Ser	Trp	Ala	Thr	Ile	
			305					310					315			
ctc	ctg	tct	ccc	ctc	ttc	agt	ttt	gtc	ttg	ggc	gtc	ttt	gcc	agc	gga	1190
Leu	Leu	Ser	Pro	Leu	Phe	Ser	Phe	Val	Leu	Gly	Val	Phe	Ala	Ser	Gly	
			320				325					330				
tca	cct	ctc	ctg	atc	ctg	act	ttc	ttg	ggg	ttt	gtg	gga	gca	gct	tcc	1238
Ser	Pro	Leu	Leu	Ile	Leu	Thr	Phe	Leu	Gly	Phe	Val	Gly	Ala	Ala	Ser	
	335					340					345					
ttt	gga	gtt	cgc	aga	ctg	ata	gga	gta	act	gag	ata	gaa	aaa	ggc	tcc	1286
Phe	Gly	Val	Arg	Arg	Leu	Ile	Gly	Val	Thr	Glu	Ile	Glu	Lys	Gly	Ser	
350					355					360					365	
agc	tac	gga	aac	caa	gag	ttt	aag	aaa	aag	gaa	taa	ttaatggctg				1332
Ser	Tyr	Gly	Asn	Gln	Glu	Phe	Lys	Lys	Lys	Glu	*					
			370					375								

  

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cctggccctt	yacctytyt	gcaccccccg	cccccgaaac	tgtctcgtaa	tgaatttctg	1752
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<210> 22  
 <211> 376  
 <212> PRT  
 <213> Homo sapiens

<400> 22

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			20					25				30			
Leu	Cys	Thr	Leu	Ala	Leu	Trp	Pro	Val	Ser	Lys	Gln	Leu	Tyr	Arg	Arg
			35				40				45				
Leu	Asn	Cys	Arg	Leu	Ala	Tyr	Ser	Leu	Trp	Ser	Gln	Leu	Val	Met	Leu
	50					55				60					
Leu	Glu	Trp	Trp	Ser	Cys	Thr	Glu	Cys	Thr	Leu	Phe	Thr	Asp	Gln	Ala
65				70					75					80	
Thr	Val	Glu	Arg	Phe	Gly	Lys	Glu	His	Ala	Val	Ile	Ile	Leu	Asn	His
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Asn	Phe	Glu	Ile	Asp	Phe	Leu	Cys	Gly	Trp	Thr	Met	Cys	Glu	Arg	Phe
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Val	Pro	Leu	Ile	Gly	Trp	Thr	Trp	Tyr	Phe	Leu	Glu	Ile	Val	Phe	Cys
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Lys	Arg	Lys	Trp	Lys	Glu	Asp	Arg	Asp	Thr	Val	Val	Glu	Gly	Leu	Arg
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			165					170						175	

Gly	Thr	Arg	Phe	Thr	Glu	Thr	Lys	His	Arg	Val	Ser	Met	Glu	Val	Ala
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Lys	Gly	Phe	Thr	Thr	Ala	Val	Lys	Cys	Leu	Arg	Gly	Thr	Val	Ala	Ala
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Val	Tyr	Asp	Val	Thr	Leu	Asn	Phe	Arg	Gly	Asn	Lys	Asn	Pro	Ser	Leu
225					230					235					240
Leu	Gly	Ile	Leu	Tyr	Gly	Lys	Lys	Tyr	Glu	Ala	Asp	Met	Cys	Val	Arg
			245						250					255	
Arg	Phe	Pro	Leu	Glu	Asp	Ile	Pro	Leu	Asp	Glu	Lys	Glu	Ala	Ala	Gln
			260					265					270		
Trp	Leu	His	Lys	Leu	Tyr	Gln	Glu	Lys	Asp	Ala	Leu	Gln	Glu	Ile	Tyr
		275					280					285			
Asn	Gln	Lys	Gly	Met	Phe	Pro	Gly	Glu	Gln	Phe	Lys	Pro	Ala	Arg	Arg
	290					295					300				
Pro	Trp	Thr	Leu	Leu	Asn	Phe	Leu	Ser	Trp	Ala	Thr	Ile	Leu	Leu	Ser
305					310					315					320
Pro	Leu	Phe	Ser	Phe	Val	Leu	Gly	Val	Phe	Ala	Ser	Gly	Ser	Pro	Leu
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 Met Lys Ser Ala  
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aaa ggt att gag aac ttg gct ttt gtc ccc tcc agc cca gac atc ctg 163  
 Lys Gly Ile Glu Asn Leu Ala Phe Val Pro Ser Ser Pro Asp Ile Leu  
 5 10 15 20

cgc cgc ttg tct gcg tcg ccc tcc caa atc gaa gtc tct gcc ttg tcc 211  
 Arg Arg Leu Ser Ala Ser Pro Ser Gln Ile Glu Val Ser Ala Leu Ser  
 25 30 35

tct gac ccc caa aga gag aat tct cag cca cag gag ctt cag aag ccc 259  
 Ser Asp Pro Gln Arg Glu Asn Ser Gln Pro Gln Glu Leu Gln Lys Pro  
 40 45 50

cag gag ccc cag aag tca cca gag cca tct ctg cct tca gcc cct ccc 307  
 Gln Glu Pro Gln Lys Ser Pro Glu Pro Ser Leu Pro Ser Ala Pro Pro  
 55 60 65

agt gtc tcc gaa gag aag ctc cgg tca ctg tcg ctg tcc gag ttt gag 355

Ser	Val	Ser	Glu	Glu	Lys	Leu	Arg	Ser	Leu	Ser	Leu	Ser	Glu	Phe	Glu		
70						75					80						
gag	ggg	tct	tac	ggc	tgg	agg	aac	ttc	cat	cct	caa	tgt	ctc	cag	cgc	403	
Glu	Gly	Ser	Tyr	Gly	Trp	Arg	Asn	Phe	His	Pro	Gln	Cys	Leu	Gln	Arg	100	
85					90					95							
tgc	aac	aca	cct	gga	ggc	ttt	ctg	ctt	cac	tac	tgc	ctc	ttg	gcc	gtc	451	
Cys	Asn	Thr	Pro	Gly	Gly	Phe	Leu	Leu	His	Tyr	Cys	Leu	Leu	Ala	Val	115	
				105					110								
acg	caa	ggg	att	gta	gtt	aat	ggc	cta	gta	aat	att	agc	att	tcc	act	499	
Thr	Gln	Gly	Ile	Val	Val	Asn	Gly	Leu	Val	Asn	Ile	Ser	Ile	Ser	Thr	130	
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gtt	gag	aag	cgt	tat	gaa	atg	aag	agt	tcc	ctg	act	ggc	ctg	att	tca	547	
Val	Glu	Lys	Arg	Tyr	Glu	Met	Lys	Ser	Ser	Leu	Thr	Gly	Leu	Ile	Ser	145	
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tca	agc	tac	gat	att	tca	ttc	tgt	ttg	ttg	tct	tta	ttt	gta	tca	ttc	595	
Ser	Ser	Tyr	Asp	Ile	Ser	Phe	Cys	Leu	Leu	Ser	Leu	Phe	Val	Ser	Phe	160	
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Phe	Gly	Glu	Arg	Gly	His	Lys	Pro	Arg	Trp	Leu	Ala	Phe	Ala	Ala	Phe	180	
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Met	Ile	Gly	Leu	Gly	Ala	Leu	Val	Phe	Ser	Leu	Pro	Gln	Phe	Phe	Ser	195	
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gga	gaa	tat	aaa	ttg	ggg	tct	ctt	ttt	gaa	gac	act	tgt	gta	aca	aca	739	
Gly	Glu	Tyr	Lys	Leu	Gly	Ser	Leu	Phe	Glu	Asp	Thr	Cys	Val	Thr	Thr	210	
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agg	aat	agc	acc	agt	tgt	aca	tct	tca	act	tct	tca	ctt	tct	aac	tac	787	
Arg	Asn	Ser	Thr	Ser	Cys	Thr	Ser	Ser	Thr	Ser	Ser	Leu	Ser	Asn	Tyr	225	
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	230					235											
cct	ctt	tat	act	ctg	gga	aca	gcc	ttt	ctt	gat	gat	tct	gtg	ccc	aca	883	
Pro	Leu	Tyr	Thr	Leu	Gly	Thr	Ala	Phe	Leu	Asp	Asp	Ser	Val	Pro	Thr	255	
245					250					255					260		
cac	aag	tct	tct	ctc	tat	ata	gga	acc	ggg	tat	gct	atg	tca	atc	tta	931	
His	Lys	Ser	Ser	Leu	Tyr	Ile	Gly	Thr	Gly	Tyr	Ala	Met	Ser	Ile	Leu	270	
				265					270					275			
ggc	cct	gct	att	ggc	tat	gta	ttg	gga	gga	caa	ctg	cta	acc	ata	tac	979	
Gly	Pro	Ala	Ile	Gly	Tyr	Val	Leu	Gly	Gly	Gln	Leu	Leu	Thr	Ile	Tyr	285	
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att	gat	gtt	gct	atg	gga	gaa	agc	act	gat	gtc	act	gag	gat	gat	ccg	1027	
Ile	Asp	Val	Ala	Met	Gly	Glu	Ser	Thr	Asp	Val	Thr	Glu	Asp	Asp	Pro	300	
		295					300					305					
cga	tgg	ttg	gga	gct	tgg	tgg	att	ggg	ttt	ctt	cta	tca	tgg	atc	ttt	1075	
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310	315	320	
gct tgg tct tta ata ata cct ttt tct tgc ttt cca aaa cat tta cca Ala Trp Ser Leu Ile Ile Pro Phe Ser Cys Phe Pro Lys His Leu Pro 325 330 335 340			1123
ggt aca gca gaa att caa gct gga aaa act tcc cag gct cat cag agt Gly Thr Ala Glu Ile Gln Ala Gly Lys Thr Ser Gln Ala His Gln Ser 345 350 355			1171
aat agt aat gca gat gtg aaa ttt gga aaa agt att aaa gat ttt cca Asn Ser Asn Ala Asp Val Lys Phe Gly Lys Ser Ile Lys Asp Phe Pro 360 365 370			1219
gct gct cta aag aat ttg atg aag aat gct gtc ttt atg tgt tta gtt Ala Ala Leu Lys Asn Leu Met Lys Asn Ala Val Phe Met Cys Leu Val 375 380 385			1267
cta tca act tct tca gaa gcc tta att act act gga ttt gct aca ttt Leu Ser Thr Ser Ser Glu Ala Leu Ile Thr Thr Gly Phe Ala Thr Phe 390 395 400			1315
tta cct aaa ttt ata gaa aat caa ttc gga ttg aca tcc agc ttc gca Leu Pro Lys Phe Ile Glu Asn Gln Phe Gly Leu Thr Ser Ser Phe Ala 405 410 415 420			1363
gct act ctt gga ggg gct gtt tta att cct gga gct gct ctc ggt caa Ala Thr Leu Gly Gly Ala Val Leu Ile Pro Gly Ala Ala Leu Gly Gln 425 430 435			1411
att tta ggt ggc ttc ctt gtt tca aaa ttc aga atg aca tgt aaa aac Ile Leu Gly Gly Phe Leu Val Ser Lys Phe Arg Met Thr Cys Lys Asn 440 445 450			1459
aca atg aag ttt gca ctg ttc aca tct gga gtt gca ctt acg ctg agt Thr Met Lys Phe Ala Leu Phe Thr Ser Gly Val Ala Leu Thr Leu Ser 455 460 465			1507
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tct gaa tca tat aat ggg act gga gaa ttg gga aac ttg ata gcc cct Ser Glu Ser Tyr Asn Gly Thr Gly Glu Leu Gly Asn Leu Ile Ala Pro 485 490 495 500			1603
tgt aat gcc aat tgt aac tgt tcg cga tca tat tat tat cct gtc tgt Cys Asn Ala Asn Cys Asn Cys Ser Arg Ser Tyr Tyr Tyr Pro Val Cys 505 510 515			1651
gga gat gga gtc caa tat ttt tct ccc tgc ttt gca ggc tgt tca aac Gly Asp Gly Val Gln Tyr Phe Ser Pro Cys Phe Ala Gly Cys Ser Asn 520 525 530			1699
cca gtt gca cac agg aag cca aag gta tat tac aac tgt tcc tgt att Pro Val Ala His Arg Lys Pro Lys Val Tyr Tyr Asn Cys Ser Cys Ile 535 540 545			1747
gaa agg aaa aca gaa ata aca tcc act gca gaa act ttt ggt ttt gaa Glu Arg Lys Thr Glu Ile Thr Ser Thr Ala Glu Thr Phe Gly Phe Glu 550 555 560			1795

gct aaa gct gga aaa tgt gaa act cat tgt gcg aaa ctg ccc ata ttc 1843  
Ala Lys Ala Gly Lys Cys Glu Thr His Cys Ala Lys Leu Pro Ile Phe  
565 570 575 580

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Leu Cys Ile Phe Phe Ile Val Ile Ile Phe Thr Phe Met Ala Gly Thr  
585 590 595

cct ata act gtg tct atc cta agg tgt gtt aat cac aga caa cgg tcc 1939  
Pro Ile Thr Val Ser Ile Leu Arg Cys Val Asn His Arg Gln Arg Ser  
600 605 610

cta gcc ttg gga ata caa ttt atg gtc ctt cga tta tta ggg aca att 1987  
Leu Ala Leu Gly Ile Gln Phe Met Val Leu Arg Leu Leu Gly Thr Ile  
615 620 625

cct gga cca att ata ttt ggt ttc aca ata gac agc aca tgt att ctt 2035  
Pro Gly Pro Ile Ile Phe Gly Phe Thr Ile Asp Ser Thr Cys Ile Leu  
630 635 640

tgg gat ata aat gat tgt gga att aaa gga gct tgc tgg att tat gat 2083  
Trp Asp Ile Asn Asp Cys Gly Ile Lys Gly Ala Cys Trp Ile Tyr Asp  
645 650 655 660

aac atc aag atg gcc cat atg cta gta gcc ata agt gtt act tgt aaa 2131  
Asn Ile Lys Met Ala His Met Leu Val Ala Ile Ser Val Thr Cys Lys  
665 670 675

gtt atc acc atg ttc ttc aat gga ttt gca atc ttt ttg tat aaa cca 2179  
Val Ile Thr Met Phe Phe Asn Gly Phe Ala Ile Phe Leu Tyr Lys Pro  
680 685 690

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Pro Pro Ser Ala Thr Asp Val Ser Phe His Lys Glu Asn Ala Val Val  
695 700 705

act aat gtt tta gca gaa cag gat ctc aac aaa ata gta aaa gaa ggg 2275  
Thr Asn Val Leu Ala Glu Gln Asp Leu Asn Lys Ile Val Lys Glu Gly  
710 715 720

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Gly	Cys	Ser	Asn	Pro	Val	Ala	His	Arg	Lys	Pro	Lys	Val	Tyr	Tyr	Asn
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Cys	Ser	Cys	Ile	Glu	Arg	Lys	Thr	Glu	Ile	Thr	Ser	Thr	Ala	Glu	Thr
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Phe	Gly	Phe	Glu	Ala	Lys	Ala	Gly	Lys	Cys	Glu	Thr	His	Cys	Ala	Lys
				565					570					575	
Leu	Pro	Ile	Phe	Leu	Cys	Ile	Phe	Phe	Ile	Val	Ile	Ile	Phe	Thr	Phe
			580					585					590		
Met	Ala	Gly	Thr	Pro	Ile	Thr	Val	Ser	Ile	Leu	Arg	Cys	Val	Asn	His
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Arg	Gln	Arg	Ser	Leu	Ala	Leu	Gly	Ile	Gln	Phe	Met	Val	Leu	Arg	Leu
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Leu	Gly	Thr	Ile	Pro	Gly	Pro	Ile	Ile	Phe	Gly	Phe	Thr	Ile	Asp	Ser
625					630					635					640
Thr	Cys	Ile	Leu	Trp	Asp	Ile	Asn	Asp	Cys	Gly	Ile	Lys	Gly	Ala	Cys
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Trp	Ile	Tyr	Asp	Asn	Ile	Lys	Met	Ala	His	Met	Leu	Val	Ala	Ile	Ser
			660					665					670		
Val	Thr	Cys	Lys	Val	Ile	Thr	Met	Phe	Phe	Asn	Gly	Phe	Ala	Ile	Phe
		675					680					685			
Leu	Tyr	Lys	Pro	Pro	Pro	Ser	Ala	Thr	Asp	Val	Ser	Phe	His	Lys	Glu
	690					695					700				
Asn	Ala	Val	Val	Thr	Asn	Val	Leu	Ala	Glu	Gln	Asp	Leu	Asn	Lys	Ile
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Gly	Glu	Val	Phe	Ala	Ile	Cys	Gly	Ser	Cys	Asp	Ala	Leu	Gly	Asn	Trp	
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aat cct caa aat gct gtg gct ctt ctt cca gag aat gac aca ggt gaa																144
Asn	Pro	Gln	Asn	Ala	Val	Ala	Leu	Leu	Pro	Glu	Asn	Asp	Thr	Gly	Glu	
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Ser	Met	Leu	Trp	Lys	Ala	Thr	Ile	Val	Leu	Ser	Arg	Gly	Val	Ser	Val	
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cag tat cgc tac ttc aaa ggg tac ttt tta gaa cca aag act atc ggt																240
Gln	Tyr	Arg	Tyr	Phe	Lys	Gly	Tyr	Phe	Leu	Glu	Pro	Lys	Thr	Ile	Gly	
	65				70					75					80	
ggt cca tgt caa gtg ata gtt cac aag tgg gag act cat cta caa cca																288

Gly	Pro	Cys	Gln	Val	Ile	Val	His	Lys	Trp	Glu	Thr	His	Leu	Gln	Pro		
				85					90					95			
cga	tca	ata	acc	cct	tta	gaa	agc	gaa	att	att	att	gac	gat	gga	caa	336	
Arg	Ser	Ile	Thr	Pro	Leu	Glu	Ser	Glu	Ile	Ile	Ile	Asp	Asp	Gly	Gln		
			100					105					110				
ttt	gga	atc	cac	aat	ggc	gtt	gaa	act	ctg	gat	tct	gga	tgg	ctg	aca	384	
Phe	Gly	Ile	His	Asn	Gly	Val	Glu	Thr	Leu	Asp	Ser	Gly	Trp	Leu	Thr		
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tgt	cag	act	gaa	ata	aga	tta	cgt	ttg	cat	tat	tct	gaa	aaa	cct	cct	432	
Cys	Gln	Thr	Glu	Ile	Arg	Leu	Arg	Leu	His	Tyr	Ser	Glu	Lys	Pro	Pro		
	130					135					140						
gtg	tca	ata	acc	aag	aaa	aaa	tta	aaa	aaa	tct	aga	ttt	agg	gtg	aag	480	
Val	Ser	Ile	Thr	Lys	Lys	Lys	Leu	Lys	Lys	Ser	Arg	Phe	Arg	Val	Lys		
	145				150					155					160		
ctg	aca	cta	gaa	ggc	ctg	gag	gaa	gat	gac	gat	gat	agg	gta	tct	ccc	528	
Leu	Thr	Leu	Glu	Gly	Leu	Glu	Glu	Asp	Asp	Asp	Asp	Arg	Val	Ser	Pro		
				165					170					175			
act	gta	ctc	cac	aaa	atg	tcc	aat	agc	ttg	gag	ata	tcc	tta	ata	agc	576	
Thr	Val	Leu	His	Lys	Met	Ser	Asn	Ser	Leu	Glu	Ile	Ser	Leu	Ile	Ser		
			180					185					190				
gac	aat	gag	ttc	aag	tgc	agg	cat	tca	cag	ccg	gag	tgt	ggc	tat	ggc	624	
Asp	Asn	Glu	Phe	Lys	Cys	Arg	His	Ser	Gln	Pro	Glu	Cys	Gly	Tyr	Gly		
		195					200					205					
ttg	cag	cct	gat	cgt	tgg	aca	gag	tac	agc	ata	cag	acg	atg	gaa	cca	672	
Leu	Gln	Pro	Asp	Arg	Trp	Thr	Glu	Tyr	Ser	Ile	Gln	Thr	Met	Glu	Pro		
	210					215					220						
gat	aac	ctg	gaa	cta	atc	ttt	gat	ttt	ttc	gaa	gaa	gat	ctc	agt	gag	720	
Asp	Asn	Leu	Glu	Leu	Ile	Phe	Asp	Phe	Phe	Glu	Glu	Asp	Leu	Ser	Glu		
	225				230					235					240		
cac	gta	gtt	cag	ggc	gat	gcc	ctt	cct	gga	cat	gtg	ggc	aca	gct	tgt	768	
His	Val	Val	Gln	Gly	Asp	Ala	Leu	Pro	Gly	His	Val	Gly	Thr	Ala	Cys		
				245					250					255			
ctc	tta	tca	tcc	acc	att	gct	gag	agt	gga	aag	agt	gct	gga	att	ctt	816	
Leu	Leu	Ser	Ser	Thr	Ile	Ala	Glu	Ser	Gly	Lys	Ser	Ala	Gly	Ile	Leu		
			260					265					270				
act	ctt	ccc	atc	atg	agc	aga	aat	tcc	cgg	aaa	aca	ata	ggc	aaa	gtg	864	
Thr	Leu	Pro	Ile	Met	Ser	Arg	Asn	Ser	Arg	Lys	Thr	Ile	Gly	Lys	Val		
		275					280					285					
aga	gtt	gac	tat	ata	att	att	aag	cca	tta	cca	gga	tac	agt	tgt	gac	912	
Arg	Val	Asp	Tyr	Ile	Ile	Ile	Lys	Pro	Leu	Pro	Gly	Tyr	Ser	Cys	Asp		
	290					295					300						
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Met	Lys	Ser	Ser	Phe	Ser	Lys	Tyr	Trp	Lys	Pro	Arg	Ile	Pro	Leu	Asp		
	305				310					315					320		
gtt	ggc	cat	cga	ggc	gca	gga	aac	tct	aca	aca	act	gcc	cag	ctg	gct	1008	
Val	Gly	His	Arg	Gly	Ala	Gly	Asn	Ser	Thr	Thr	Thr	Ala	Gln	Leu	Ala		

325										330					335					
aaa gtt caa gaa aat act att gct tct tta aga aat gct gct agt cat	1056																			
Lys Val Gln Glu Asn Thr Ile Ala Ser Leu Arg Asn Ala Ala Ser His																				
340 345 350																				
ggt gca gcc ttt gta gaa ttt gac gta cac ctt tca aag gac ttt gtg	1104																			
Gly Ala Ala Phe Val Glu Phe Asp Val His Leu Ser Lys Asp Phe Val																				
355 360 365																				
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Pro Val Val Tyr His Asp Leu Thr Cys Cys Leu Thr Met Lys Lys Lys																				
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Phe Asp Ala Asp Pro Val Glu Leu Phe Glu Ile Pro Val Lys Glu Leu																				
385 390 395 400																				
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Thr Phe Asp Gln Leu Gln Leu Leu Lys Leu Thr His Val Thr Ala Leu																				
405 410 415																				
aaa tct aag gat cgg aaa gaa tct gtg gtt cag gag gaa aat tcc ttt	1296																			
Lys Ser Lys Asp Arg Lys Glu Ser Val Val Gln Glu Glu Asn Ser Phe																				
420 425 430																				
tca gaa aat cag cca ttt cct tct ctt aag atg gtt tta gag tct ttg	1344																			
Ser Glu Asn Gln Pro Phe Pro Ser Leu Lys Met Val Leu Glu Ser Leu																				
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485 490 495																				
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Arg Gln Lys Gln Asn Lys Tyr Pro Ile Leu Phe Leu Thr Gln Gly Lys																				
515 520 525																				
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Ser Glu Ile Tyr Pro Glu Leu Met Asp Leu Arg Ser Arg Thr Thr Pro																				
530 535 540																				
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Ile Ala Met Ser Phe Ala Gln Phe Glu Asn Leu Leu Gly Ile Asn Val																				
545 550 555 560																				
cat act gaa gac ttg ctc aga aac cca tcc tat att caa gag gca aaa	1728																			
His Thr Glu Asp Leu Leu Arg Asn Pro Ser Tyr Ile Gln Glu Ala Lys																				
565 570 575																				

gct aag gga cta gtc ata ttc tgc tgg ggt gat gat acc aat gat cct	1776
Ala Lys Gly Leu Val Ile Phe Cys Trp Gly Asp Asp Thr Asn Asp Pro	
580 585 590	
gaa aac aga agg aaa ttg aag gaa ctt gga gtt aat ggt cta att tat	1824
Glu Asn Arg Arg Lys Leu Lys Glu Leu Gly Val Asn Gly Leu Ile Tyr	
595 600 605	
gat agg ata tat gat tgg atg cct gaa caa cca aat ata ttc caa gtg	1872
Asp Arg Ile Tyr Asp Trp Met Pro Glu Gln Pro Asn Ile Phe Gln Val	
610 615 620	
gag caa ttg gaa cgc ctg aag cag gaa ttg cca gag ctt aag agc tgt	1920
Glu Gln Leu Glu Arg Leu Lys Gln Glu Leu Pro Glu Leu Lys Ser Cys	
625 630 635 640	
ttg tgt ccc act gtt agc cgc ttt gtt ccc tca tct ttg tgt ggg gag	1968
Leu Cys Pro Thr Val Ser Arg Phe Val Pro Ser Ser Leu Cys Gly Glu	
645 650 655	
tct gat atc cat gtg gat gcc aac ggc att gat aac gtg gag aat gct	2016
Ser Asp Ile His Val Asp Ala Asn Gly Ile Asp Asn Val Glu Asn Ala	
660 665 670	
tag	2019
*	

<210> 26  
 <211> 672  
 <212> PRT  
 <213> Homo sapiens

<400> 26

Met Thr Pro Ser Gln Val Ala Phe Glu Ile Arg Gly Thr Leu Leu Pro	
1 5 10 15	
Gly Glu Val Phe Ala Ile Cys Gly Ser Cys Asp Ala Leu Gly Asn Trp	
20 25 30	
Asn Pro Gln Asn Ala Val Ala Leu Leu Pro Glu Asn Asp Thr Gly Glu	
35 40 45	
Ser Met Leu Trp Lys Ala Thr Ile Val Leu Ser Arg Gly Val Ser Val	
50 55 60	
Gln Tyr Arg Tyr Phe Lys Gly Tyr Phe Leu Glu Pro Lys Thr Ile Gly	
65 70 75 80	
Gly Pro Cys Gln Val Ile Val His Lys Trp Glu Thr His Leu Gln Pro	
85 90 95	
Arg Ser Ile Thr Pro Leu Glu Ser Glu Ile Ile Ile Asp Asp Gly Gln	
100 105 110	
Phe Gly Ile His Asn Gly Val Glu Thr Leu Asp Ser Gly Trp Leu Thr	
115 120 125	
Cys Gln Thr Glu Ile Arg Leu Arg Leu His Tyr Ser Glu Lys Pro Pro	
130 135 140	
Val Ser Ile Thr Lys Lys Lys Leu Lys Lys Ser Arg Phe Arg Val Lys	
145 150 155 160	
Leu Thr Leu Glu Gly Leu Glu Glu Asp Asp Asp Arg Val Ser Pro	
165 170 175	
Thr Val Leu His Lys Met Ser Asn Ser Leu Glu Ile Ser Leu Ile Ser	
180 185 190	
Asp Asn Glu Phe Lys Cys Arg His Ser Gln Pro Glu Cys Gly Tyr Gly	





<210> 27  
 <211> 2213  
 <212> DNA  
 <213> Homo sapiens  
  
 <220>  
 <221> CDS  
 <222> (451)...(1752)

<400> 27  
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 cgctccaggcg cgcgcccccg acccgtggct ggaccagggc gatccgcttt gcagagagac 120  
 gcgccccctcg gcatggagcg cccccgggag ctgccctgag ggcggtggcg gcagcggcgg 180  
 cgatgcagcc agcgcggcag ctgccggggc caggaacggc cgcccggagc tgggaggacg 240  
 ccgagcgcgc cgcgccccgg ccactgaccg aggatgttct agtgactgga tcctttccag 300  
 ttggtgcctg ggaaatggca gccactacta attcagcctt gaagacagta ccgtgcccac 360  
 tcagcaccat tacatagaag atagaactca agaggagccg ccctgcctgg agctagcctg 420  
 ggggcgagcc aggggtcccc aacccccggg atg acc gcg gcc agc cgg gcc aac 474  
 Met Thr Ala Ala Ser Arg Ala Asn  
 1 5  
  
 ccc tac agc atc gtg tca tgc gag gag gac ggg ctg cac ctg gtc acc 522  
 Pro Tyr Ser Ile Val Ser Ser Glu Glu Asp Gly Leu His Leu Val Thr  
 10 15 20  
  
 atg tgc ggc gcc aac ggc ttc ggc aac ggc aag gtg cac acg cgg cgc 570  
 Met Ser Gly Ala Asn Gly Phe Gly Asn Gly Lys Val His Thr Arg Arg  
 25 30 35 40  
  
 agg tgc cgc aac cgc ttc gtc aag aag aat ggc cag tgc aac att gag 618  
 Arg Cys Arg Asn Arg Phe Val Lys Lys Asn Gly Gln Cys Asn Ile Glu  
 45 50 55  
  
 ttc gcc aac atg gac gag aag tca cag cgc tac ctg gct gac atg ttc 666  
 Phe Ala Asn Met Asp Glu Lys Ser Gln Arg Tyr Leu Ala Asp Met Phe  
 60 65 70  
  
 acc acc tgt gtg gac atc cgc tgg cgg tac atg ctg ctc atc ttc tgc 714  
 Thr Thr Cys Val Asp Ile Arg Trp Arg Tyr Met Leu Leu Ile Phe Ser  
 75 80 85  
  
 ctg gcc ttc ctt gcc tcc tgg ctg ctg ttc ggc atc atc ttc tgg gtc 762  
 Leu Ala Phe Leu Ala Ser Trp Leu Leu Phe Gly Ile Ile Phe Trp Val  
 90 95 100  
  
 atc gcg gtg gca cac ggt gac ctg gag ccg gct gag ggc cgg ggc cgc 810  
 Ile Ala Val Ala His Gly Asp Leu Glu Pro Ala Glu Gly Arg Gly Arg  
 105 110 115 120  
  
 aca ccc tgt gtg atg cag gtg cac ggc ttc atg gcg gcc ttc ctc ttc 858  
 Thr Pro Cys Val Met Gln Val His Gly Phe Met Ala Ala Phe Leu Phe  
 125 130 135  
  
 tcc atc gag acg cag acc acc atc ggc tac ggg ctg cgc tgt gtg acg 906  
 Ser Ile Glu Thr Gln Thr Thr Ile Gly Tyr Gly Leu Arg Cys Val Thr  
 140 145 150  
  
 gag gag tgc ccg gtg gcc gtc ttc atg gtg gtg gcc cag tcc atc gtg 954  
 Glu Glu Cys Pro Val Ala Val Phe Met Val Val Ala Gln Ser Ile Val  
 155 160 165

ggc tgc atc atc gac tcc ttc atg att ggt gcc atc atg gcc aag atg	1002
Gly Cys Ile Ile Asp Ser Phe Met Ile Gly Ala Ile Met Ala Lys Met	
170 175 180	
gca agg ccc aag aag cgg gca cag acg ctg ctg ttc agc cac aac gcc	1050
Ala Arg Pro Lys Lys Arg Ala Gln Thr Leu Leu Phe Ser His Asn Ala	
185 190 195 200	
gtg gtg gcc ctg cgt gac ggc aag ctc tgc ctc atg tgg cgt gtg ggt	1098
Val Val Ala Leu Arg Asp Gly Lys Leu Cys Leu Met Trp Arg Val Gly	
205 210 215	
aac ctg cgc aag agc cac att gtg gag gcc cat gtg cgc gcg cag ctc	1146
Asn Leu Arg Lys Ser His Ile Val Glu Ala His Val Arg Ala Gln Leu	
220 225 230	
atc aag ccg cgg gtc acc gag gag ggc gag tac atc ccg ctg gac cag	1194
Ile Lys Pro Arg Val Thr Glu Glu Gly Glu Tyr Ile Pro Leu Asp Gln	
235 240 245	
atc gac atc gat gtg ggc ttc gac aag ggc ctg gac cgc atc ttt ctg	1242
Ile Asp Ile Asp Val Gly Phe Asp Lys Gly Leu Asp Arg Ile Phe Leu	
250 255 260	
gtg tcg ccc atc acc atc ttg cat gag att gac gag gcc agc ccg ctc	1290
Val Ser Pro Ile Thr Ile Leu His Glu Ile Asp Glu Ala Ser Pro Leu	
265 270 275 280	
ttc ggc atc agc cgg cag gac ctg gag acg gac gac ttt gag atc gtg	1338
Phe Gly Ile Ser Arg Gln Asp Leu Glu Thr Asp Asp Phe Glu Ile Val	
285 290 295	
gtc atc ctg gaa ggc atg gtg gag gcc aca gcc atg acc acc cag gcc	1386
Val Ile Leu Glu Gly Met Val Glu Ala Thr Ala Met Thr Thr Gln Ala	
300 305 310	
cgc agc tcc tac ctg gcc aat gag atc ctg tgg ggt cac cgc ttt gag	1434
Arg Ser Ser Tyr Leu Ala Asn Glu Ile Leu Trp Gly His Arg Phe Glu	
315 320 325	
ccc gtg ctc ttc gag gag aag aac cag tac aag att gac tac tcg cac	1482
Pro Val Leu Phe Glu Glu Lys Asn Gln Tyr Lys Ile Asp Tyr Ser His	
330 335 340	
ttc cac aag acc tat gag gtg ccc tct acg ccc cgc tgc agt gcg aag	1530
Phe His Lys Thr Tyr Glu Val Pro Ser Thr Pro Arg Cys Ser Ala Lys	
345 350 355 360	
gat ctg gta gag aac aag ttc ctg ctg ccc agc gcc aac tcc ttc tgc	1578
Asp Leu Val Glu Asn Lys Phe Leu Leu Pro Ser Ala Asn Ser Phe Cys	
365 370 375	
tac gag aac gag ctg gcc ttc ctg agc cgt gac gag gag gat gag gcg	1626
Tyr Glu Asn Glu Leu Ala Phe Leu Ser Arg Asp Glu Glu Asp Glu Ala	
380 385 390	
gac gga gac cag gac ggc cga agc cgg gac ggc ctc agc ccc cag gcc	1674
Asp Gly Asp Gln Asp Gly Arg Ser Arg Asp Gly Leu Ser Pro Gln Ala	
395 400 405	
agg cat gac ttt gac aga ctc cag gct ggc ggc ggg gtc ctg gag cag	1722

Arg His Asp Phe Asp Arg Leu Gln Ala Gly Gly Gly Val Leu Glu Gln  
 410 415 420

cgg ccc tac aga cgg gag tca gag atc tga gccaaccttg gccgacatgc 1772  
 Arg Pro Tyr Arg Arg Glu Ser Glu Ile \*  
 425 430

agcatccacc cccggctggg gagaggcccc gcggtcgctc aggggccccg ggtttgagca 1832  
 gaacgggccc agtgcctgg gttgcagact cagtagcggt ttagtcgttt tatgtttctt 1892  
 tgcaacggcc tcagaagttt ggccggagag ggggcagcca gagcggcagc ccccggcctc 1952  
 agaggctatc acaggctcag ggcaaagaag tggcctcctg gggggccagg ccacgagggc 2012  
 cagggttctt gcctgaagat ggagctgcag cctgcgggga agcagctcag ctcgatggtg 2072  
 ggcccagcct ctgctgtcca aggctggcta gctgcgggtg tccttgctgg tttttaactt 2132  
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 aaaaaaaaaa agggcggccg c 2213

<210> 28  
 <211> 433  
 <212> PRT  
 <213> Homo sapiens

<400> 28  
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 Glu Asp Gly Leu His Leu Val Thr Met Ser Gly Ala Asn Gly Phe Gly  
 20 25 30  
 Asn Gly Lys Val His Thr Arg Arg Cys Arg Asn Arg Phe Val Lys  
 35 40 45  
 Lys Asn Gly Gln Cys Asn Ile Glu Phe Ala Asn Met Asp Glu Lys Ser  
 50 55 60  
 Gln Arg Tyr Leu Ala Asp Met Phe Thr Thr Cys Val Asp Ile Arg Trp  
 65 70 75 80  
 Arg Tyr Met Leu Leu Ile Phe Ser Leu Ala Phe Leu Ala Ser Trp Leu  
 85 90 95  
 Leu Phe Gly Ile Ile Phe Trp Val Ile Ala Val Ala His Gly Asp Leu  
 100 105 110  
 Glu Pro Ala Glu Gly Arg Gly Arg Thr Pro Cys Val Met Gln Val His  
 115 120 125  
 Gly Phe Met Ala Ala Phe Leu Phe Ser Ile Glu Thr Gln Thr Thr Ile  
 130 135 140  
 Gly Tyr Gly Leu Arg Cys Val Thr Glu Glu Cys Pro Val Ala Val Phe  
 145 150 155 160  
 Met Val Val Ala Gln Ser Ile Val Gly Cys Ile Ile Asp Ser Phe Met  
 165 170 175  
 Ile Gly Ala Ile Met Ala Lys Met Ala Arg Pro Lys Lys Arg Ala Gln  
 180 185 190  
 Thr Leu Leu Phe Ser His Asn Ala Val Val Ala Leu Arg Asp Gly Lys  
 195 200 205  
 Leu Cys Leu Met Trp Arg Val Gly Asn Leu Arg Lys Ser His Ile Val  
 210 215 220  
 Glu Ala His Val Arg Ala Gln Leu Ile Lys Pro Arg Val Thr Glu Glu  
 225 230 235 240  
 Gly Glu Tyr Ile Pro Leu Asp Gln Ile Asp Ile Asp Val Gly Phe Asp  
 245 250 255  
 Lys Gly Leu Asp Arg Ile Phe Leu Val Ser Pro Ile Thr Ile Leu His  
 260 265 270  
 Glu Ile Asp Glu Ala Ser Pro Leu Phe Gly Ile Ser Arg Gln Asp Leu  
 275 280 285  
 Glu Thr Asp Asp Phe Glu Ile Val Val Ile Leu Glu Gly Met Val Glu  
 290 295 300  
 Ala Thr Ala Met Thr Thr Gln Ala Arg Ser Ser Tyr Leu Ala Asn Glu

305					310					315				320
Ile	Leu	Trp	Gly	His	Arg	Phe	Glu	Pro	Val	Leu	Phe	Glu	Glu	Lys
				325					330					335
Gln	Tyr	Lys	Ile	Asp	Tyr	Ser	His	Phe	His	Lys	Thr	Tyr	Glu	Val
			340					345					350	
Ser	Thr	Pro	Arg	Cys	Ser	Ala	Lys	Asp	Leu	Val	Glu	Asn	Lys	Phe
		355					360					365		Leu
Leu	Pro	Ser	Ala	Asn	Ser	Phe	Cys	Tyr	Glu	Asn	Glu	Leu	Ala	Phe
	370					375				380				Leu
Ser	Arg	Asp	Glu	Glu	Asp	Glu	Ala	Asp	Gly	Asp	Gln	Asp	Gly	Arg
385					390					395				400
Arg	Asp	Gly	Leu	Ser	Pro	Gln	Ala	Arg	His	Asp	Phe	Asp	Arg	Leu
				405					410					415
Ala	Gly	Gly	Gly	Val	Leu	Glu	Gln	Arg	Pro	Tyr	Arg	Arg	Glu	Ser
			420					425					430	
Ile														

<210> 29  
 <211> 1697  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (98)...(1282)

<400> 29  
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 Met Ser Gly Glu Asp Glu  
 1 5

caa cag gag caa act atc gct gag gac ctg gtc gtg acc aag tat aag 163  
 Gln Gln Glu Gln Thr Ile Ala Glu Asp Leu Val Val Thr Lys Tyr Lys  
 10 15 20

atg ggg ggc gac atc gcc aac agg gta ctt cgg tcc ttg gtg gaa gca 211  
 Met Gly Gly Asp Ile Ala Asn Arg Val Leu Arg Ser Leu Val Glu Ala  
 25 30 35

tct agc tca ggt gtg tcg gta ctc agc ctg tgt gag aaa ggt gat gcc 259  
 Ser Ser Ser Gly Val Ser Val Leu Ser Leu Cys Glu Lys Gly Asp Ala  
 40 45 50

atg att atg gaa gaa aca ggg aaa atc ttc aag aaa gaa aag gaa atg 307  
 Met Ile Met Glu Glu Thr Gly Lys Ile Phe Lys Lys Glu Lys Glu Met  
 55 60 65 70

aag aaa ggt att gct ttt ccc acc agc att tcg gta aat aac tgt gta 355  
 Lys Lys Gly Ile Ala Phe Pro Thr Ser Ile Ser Val Asn Asn Cys Val  
 75 80 85

tgt cac ttc tcc cct ttg aag agc gac cag gat tat att ctc aag gaa 403  
 Cys His Phe Ser Pro Leu Lys Ser Asp Gln Asp Tyr Ile Leu Lys Glu  
 90 95 100

ggt gac ttg gta aaa att gac ctt ggg gtc cat gtg gat ggc ttc atc 451  
 Gly Asp Leu Val Lys Ile Asp Leu Gly Val His Val Asp Gly Phe Ile  
 105 110 115

gct aat gta gct cac act ttt gtg gtt gat gta gct cag ggg acc caa	499
Ala Asn Val Ala His Thr Phe Val Val Asp Val Ala Gln Gly Thr Gln	
120 125 130	
gta aca ggg agg aaa gca gat gtt att aag gca gct cac ctt tgt gct	547
Val Thr Gly Arg Lys Ala Asp Val Ile Lys Ala Ala His Leu Cys Ala	
135 140 145 150	
gaa gct gcc cta cgc ctg gtc aaa cct gga aat cag aac aca caa gtg	595
Glu Ala Ala Leu Arg Leu Val Lys Pro Gly Asn Gln Asn Thr Gln Val	
155 160 165	
aca gaa gcc tgg aac aaa gtt gcc cac tca ttt aac tgc acg cca ata	643
Thr Glu Ala Trp Asn Lys Val Ala His Ser Phe Asn Cys Thr Pro Ile	
170 175 180	
gaa ggt atg ctg tca cac cag ttg aag cag cat gtc atc gat gga gaa	691
Glu Gly Met Leu Ser His Gln Leu Lys Gln His Val Ile Asp Gly Glu	
185 190 195	
aaa acc att atc cag aat ccc aca gac cag cag aag aag gac cat gaa	739
Lys Thr Ile Ile Gln Asn Pro Thr Asp Gln Gln Lys Lys Asp His Glu	
200 205 210	
aaa gct gaa ttt gag gta cat gaa gta tat gct gtg gat gtt ctc gtc	787
Lys Ala Glu Phe Glu Val His Glu Val Tyr Ala Val Asp Val Leu Val	
215 220 225 230	
agc tca gga gag ggc aag gcc aag gat gca gga cag aga acc act att	835
Ser Ser Gly Glu Gly Lys Ala Lys Asp Ala Gly Gln Arg Thr Thr Ile	
235 240 245	
tac aaa cga gac ccc tct aaa cag tat gga ctg aaa atg aaa act tca	883
Tyr Lys Arg Asp Pro Ser Lys Gln Tyr Gly Leu Lys Met Lys Thr Ser	
250 255 260	
cgt gcc ttc ttc agt gag gtg gaa agg cgt ttt gat gcc atg ccg ttt	931
Arg Ala Phe Phe Ser Glu Val Glu Arg Arg Phe Asp Ala Met Pro Phe	
265 270 275	
act tta aga gca ttt gaa gat gag aag aag gct cgg atg ggt gtg gtg	979
Thr Leu Arg Ala Phe Glu Asp Glu Lys Lys Ala Arg Met Gly Val Val	
280 285 290	
gag tgc gcc aaa cat gaa ctg ctg caa cca ttt aat gtt ctc tat gag	1027
Glu Cys Ala Lys His Glu Leu Leu Gln Pro Phe Asn Val Leu Tyr Glu	
295 300 305 310	
aag gag ggt gaa ttt gtt gcc cag ttt aaa ttt aca gtt ctg ctc atg	1075
Lys Glu Gly Glu Phe Val Ala Gln Phe Lys Phe Thr Val Leu Leu Met	
315 320 325	
ccc aat ggc ccc atg cgg ata acc agt ggt ccc ttc gag cct gac ctc	1123
Pro Asn Gly Pro Met Arg Ile Thr Ser Gly Pro Phe Glu Pro Asp Leu	
330 335 340	
tac aag tct gag atg gag gtc cag gat gca gag cta aag gcc ctc ctc	1171
Tyr Lys Ser Glu Met Glu Val Gln Asp Ala Glu Leu Lys Ala Leu Leu	
345 350 355	

cag agt tct gca agt cga aaa acc cag aaa aag aaa aaa aag aag gcc 1219  
 Gln Ser Ser Ala Ser Arg Lys Thr Gln Lys Lys Lys Lys Lys Lys Ala  
 360 365 370

tcc aag act gca gag aat ccc acc agt ggg gaa aca tta gaa gaa aat 1267  
 Ser Lys Thr Ala Glu Asn Pro Thr Ser Gly Glu Thr Leu Glu Glu Asn  
 375 380 385 390

gaa gct ggg gac tga ggtgcgtccc atctccccag cttgctgctc ctgcctcatc 1322  
 Glu Ala Gly Asp \*

cccttcccac caaacccccag actctgtgaa gtgcagttct tctccaccta ggaccgccag 1382  
 cagagcgggg ggatctccct gccccaccc cagttcccca acccactccc ttccaacaac 1442  
 aaccagctcc aactgactct ggtcttgga ggtgaggctt cccaaccacg gaagactact 1502  
 ttaaacgaaa aaaagaaatt gaataataaa atcaggagtc aaaattcatc gtcttcaagg 1562  
 cccctctttc tagccttttc tactactctc tgccttggtca aggtttgtgc cccactacag 1622  
 aacagggcta aattagccac caccactgaa aactcagccg aattttttta taccactctg 1682  
 acgtcagcat ttttt 1697

<210> 30  
 <211> 394  
 <212> PRT  
 <213> Homo sapiens

<400> 30  
 Met Ser Gly Glu Asp Glu Gln Gln Glu Gln Thr Ile Ala Glu Asp Leu  
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 Val Val Thr Lys Tyr Lys Met Gly Gly Asp Ile Ala Asn Arg Val Leu  
 20 25 30  
 Arg Ser Leu Val Glu Ala Ser Ser Ser Gly Val Ser Val Leu Ser Leu  
 35 40 45  
 Cys Glu Lys Gly Asp Ala Met Ile Met Glu Glu Thr Gly Lys Ile Phe  
 50 55 60  
 Lys Lys Glu Lys Glu Met Lys Lys Gly Ile Ala Phe Pro Thr Ser Ile  
 65 70 75 80  
 Ser Val Asn Asn Cys Val Cys His Phe Ser Pro Leu Lys Ser Asp Gln  
 85 90 95  
 Asp Tyr Ile Leu Lys Glu Gly Asp Leu Val Lys Ile Asp Leu Gly Val  
 100 105 110  
 His Val Asp Gly Phe Ile Ala Asn Val Ala His Thr Phe Val Val Asp  
 115 120 125  
 Val Ala Gln Gly Thr Gln Val Thr Gly Arg Lys Ala Asp Val Ile Lys  
 130 135 140  
 Ala Ala His Leu Cys Ala Glu Ala Ala Leu Arg Leu Val Lys Pro Gly  
 145 150 155 160  
 Asn Gln Asn Thr Gln Val Thr Glu Ala Trp Asn Lys Val Ala His Ser  
 165 170 175  
 Phe Asn Cys Thr Pro Ile Glu Gly Met Leu Ser His Gln Leu Lys Gln  
 180 185 190  
 His Val Ile Asp Gly Glu Lys Thr Ile Ile Gln Asn Pro Thr Asp Gln  
 195 200 205  
 Gln Lys Lys Asp His Glu Lys Ala Glu Phe Glu Val His Glu Val Tyr  
 210 215 220  
 Ala Val Asp Val Leu Val Ser Ser Gly Glu Gly Lys Ala Lys Asp Ala  
 225 230 235 240  
 Gly Gln Arg Thr Thr Ile Tyr Lys Arg Asp Pro Ser Lys Gln Tyr Gly  
 245 250 255  
 Leu Lys Met Lys Thr Ser Arg Ala Phe Phe Ser Glu Val Glu Arg Arg  
 260 265 270  
 Phe Asp Ala Met Pro Phe Thr Leu Arg Ala Phe Glu Asp Glu Lys Lys



105	110	115	
aac gag acc act ttt gag gac aga gac aag tgt ccc ctg tgg cag aaa Asn Glu Thr Thr Phe Glu Asp Arg Asp Lys Cys Pro Leu Trp Gln Lys 120 125 130			677
tgg tgc gag ctg ctg gtg aat cag tca gag ggt gcc agt gct tac att Trp Ser Glu Leu Leu Val Asn Gln Ser Glu Gly Ala Ser Ala Tyr Ile 135 140 145 150			725
ctg aat tac tta atg tac atc cta tgg gcg ctg ctg ttt gca ttt ttg Leu Asn Tyr Leu Met Tyr Ile Leu Trp Ala Leu Leu Phe Ala Phe Leu 155 160 165			773
gct gtc tcc ctg gtg cgt gta ttt gca cca tat gcc tgt ggc tct ggc Ala Val Ser Leu Val Arg Val Phe Ala Pro Tyr Ala Cys Gly Ser Gly 170 175 180			821
ata cca gag ata aag acc att ttg agc ggc ttt atc atc agg ggc tac Ile Pro Glu Ile Lys Thr Ile Leu Ser Gly Phe Ile Ile Arg Gly Tyr 185 190 195			869
ttg ggg aag tgg acc ctg cta atc aag aca gtc acg ctg gtg ctg gta Leu Gly Lys Trp Thr Leu Leu Ile Lys Thr Val Thr Leu Val Leu Val 200 205 210			917
gtg tcc tcc ggt ctg agc ctt ggg aag gaa ggg ccg cta gtg cac gtg Val Ser Ser Gly Leu Ser Leu Gly Lys Glu Gly Pro Leu Val His Val 215 220 225 230			965
gct tgt tgc tgt ggc aac ttc ttc agc agc ctt ttc tcc aag tac agc Ala Cys Cys Cys Gly Asn Phe Phe Ser Ser Leu Phe Ser Lys Tyr Ser 235 240 245			1013
aag aat gag ggc aag agg cgg gag gtg ctt tca gct gca gcg gct gct Lys Asn Glu Gly Lys Arg Arg Glu Val Leu Ser Ala Ala Ala Ala Ala 250 255 260			1061
gga gtc tct gtt gcc ttt ggt gca cca att gga ggc gtg ctt ttc agt Gly Val Ser Val Ala Phe Gly Ala Pro Ile Gly Gly Val Leu Phe Ser 265 270 275			1109
cta gaa gag gtc agt tac tac ttt ccc ctg aag acc ttg tgg agg tca Leu Glu Glu Val Ser Tyr Tyr Phe Pro Leu Lys Thr Leu Trp Arg Ser 280 285 290			1157
ttt ttc gca gcc ctg gtg gcg gcc ttt acg ctg aga tcc atc aat ccc Phe Phe Ala Ala Leu Val Ala Ala Phe Thr Leu Arg Ser Ile Asn Pro 295 300 305 310			1205
ttt ggg aat agc cgt ctc gtt ctc ttt tat gtg gaa tac cac acg ccc Phe Gly Asn Ser Arg Leu Val Leu Phe Tyr Val Glu Tyr His Thr Pro 315 320 325			1253
tgg tac atg gct gaa ctc ttc ccc ttc atc ctg ctt ggg gtc ttc ggg Trp Tyr Met Ala Glu Leu Phe Pro Phe Ile Leu Leu Gly Val Phe Gly 330 335 340			1301
ggc ttg tgg gga acc ctc ttc atc cgc tgc aac atc gcc tgg tgc agg Gly Leu Trp Gly Thr Leu Phe Ile Arg Cys Asn Ile Ala Trp Cys Arg 345 350 355			1349



agg	cgc	aag	acc	acc	agg	ctg	ggg	aag	tac	ccg	gtg	ctg	gag	gtc	att	1397
Arg	Arg	Lys	Thr	Thr	Arg	Leu	Gly	Lys	Tyr	Pro	Val	Leu	Glu	Val	Ile	
	360					365					370					
gtg	gtg	act	gcc	atc	act	gcc	atc	att	gcc	tac	ccc	aat	ccc	tac	aca	1445
Val	Val	Thr	Ala	Ile	Thr	Ala	Ile	Ile	Ala	Tyr	Pro	Asn	Pro	Tyr	Thr	
	375				380				385						390	
cgc	cag	agc	acc	agc	gag	ctc	att	tct	gag	ctg	ttc	aat	gac	tgt	gga	1493
Arg	Gln	Ser	Thr	Ser	Glu	Leu	Ile	Ser	Glu	Leu	Phe	Asn	Asp	Cys	Gly	
				395				400						405		
gcc	ctt	gag	tct	tcc	cag	ctc	tgt	gac	tac	atc	aat	gac	ccc	aac	atg	1541
Ala	Leu	Glu	Ser	Ser	Gln	Leu	Cys	Asp	Tyr	Ile	Asn	Asp	Pro	Asn	Met	
			410					415					420			
act	cgg	cct	gtg	gat	gac	att	cca	gac	cgg	ccg	gct	ggg	gtc	ggg	gtt	1589
Thr	Arg	Pro	Val	Asp	Asp	Ile	Pro	Asp	Arg	Pro	Ala	Gly	Val	Gly	Val	
		425				430						435				
tac	acg	gcc	atg	tgg	cag	ctg	gcc	ctg	gca	ctg	atc	ttc	aaa	atc	gtc	1637
Tyr	Thr	Ala	Met	Trp	Gln	Leu	Ala	Leu	Ala	Leu	Ile	Phe	Lys	Ile	Val	
	440				445						450					
gtt	acc	ata	ttt	acc	ttt	ggc	atg	aag	atc	ccg	tcg	ggc	ctc	ttc	atc	1685
Val	Thr	Ile	Phe	Thr	Phe	Gly	Met	Lys	Ile	Pro	Ser	Gly	Leu	Phe	Ile	
	455				460					465					470	
ccc	agc	atg	gct	gtg	ggc	gcg	ata	gcg	ggc	agg	atg	gtg	gga	att	ggc	1733
Pro	Ser	Met	Ala	Val	Gly	Ala	Ile	Ala	Gly	Arg	Met	Val	Gly	Ile	Gly	
				475					480					485		
gtg	gag	cag	ctg	gcc	tac	cat	cac	cat	gac	tgg	atc	atc	ttc	agg	aac	1781
Val	Glu	Gln	Leu	Ala	Tyr	His	His	His	Asp	Trp	Ile	Ile	Phe	Arg	Asn	
			490					495					500			
tgg	tgc	aga	ccc	ggg	gca	gac	tgt	gtc	acg	cca	ggg	ctg	tac	gca	atg	1829
Trp	Cys	Arg	Pro	Gly	Ala	Asp	Cys	Val	Thr	Pro	Gly	Leu	Tyr	Ala	Met	
		505					510					515				
gtg	gga	gct	gcg	gcc	tgc	ctc	ggg	gga	gtt	acc	agg	atg	acg	gtg	tca	1877
Val	Gly	Ala	Ala	Ala	Cys	Leu	Gly	Gly	Val	Thr	Arg	Met	Thr	Val	Ser	
	520					525					530					
ttg	gtg	gtc	atc	atg	ttt	gaa	tta	acc	ggg	ggg	ctg	gag	tac	atc	gtg	1925
Leu	Val	Val	Ile	Met	Phe	Glu	Leu	Thr	Gly	Gly	Leu	Glu	Tyr	Ile	Val	
	535				540				545						550	
ccc	ctg	atg	gcg	gcg	gct	gtg	acc	agc	aag	tgg	gta	gct	gat	gca	ttt	1973
Pro	Leu	Met	Ala	Ala	Ala	Val	Thr	Ser	Lys	Trp	Val	Ala	Asp	Ala	Phe	
				555					560					565		
ggg	aaa	gaa	ggc	atc	tac	gag	gcc	cac	atc	cac	tta	aat	ggg	tac	cct	2021
Gly	Lys	Glu	Gly	Ile	Tyr	Glu	Ala	His	Ile	His	Leu	Asn	Gly	Tyr	Pro	
			570					575					580			
ttc	ctt	gac	gtg	aag	gac	gag	ttt	act	cac	cgc	aca	ctg	gcc	acc	gac	2069
Phe	Leu	Asp	Val	Lys	Asp	Glu	Phe	Thr	His	Arg	Thr	Leu	Ala	Thr	Asp	
		585					590					595				

gtc atg cgg ccc cgg cgg gga gag ccg cca ctg tgc gtg ctc acc cag	2117
Val Met Arg Pro Arg Arg Gly Glu Pro Pro Leu Ser Val Leu Thr Gln	
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Asp Ser Met Thr Val Glu Asp Val Glu Thr Leu Ile Lys Glu Thr Asp	
615 620 625 630	
tac aac ggc ttc ccc gtg gtg gtc tcc aga gac tcc gag cgc ctc att	2213
Tyr Asn Gly Phe Pro Val Val Val Ser Arg Asp Ser Glu Arg Leu Ile	
635 640 645	
gga ttt gcc cag agg agg gaa ctg att ctc gca ata aag aac gcc aga	2261
Gly Phe Ala Gln Arg Arg Glu Leu Ile Leu Ala Ile Lys Asn Ala Arg	
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cag agg cag gag ggc att gtg agc aat tcc atc atg tac ttc acg gag	2309
Gln Arg Gln Glu Gly Ile Val Ser Asn Ser Ile Met Tyr Phe Thr Glu	
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gaa ccc ccc gag ctg ccg gcc aac agc cca cat ccc ctg aag ctg cgg	2357
Glu Pro Pro Glu Leu Pro Ala Asn Ser Pro His Pro Leu Lys Leu Arg	
680 685 690	
cgc atc ctg aac ctc agc ccg ttt aca gtg aca gac cac act ccg atg	2405
Arg Ile Leu Asn Leu Ser Pro Phe Thr Val Thr Asp His Thr Pro Met	
695 700 705 710	
gaa acg gtg gtg gat atc ttc cgg aaa ctg ggg ctt cgg cag tgc ctg	2453
Glu Thr Val Val Asp Ile Phe Arg Lys Leu Gly Leu Arg Gln Cys Leu	
715 720 725	
gtg acg cgg agc ggg aga ctt ctt ggc atc atc aca aaa aag gat gtt	2501
Val Thr Arg Ser Gly Arg Leu Leu Gly Ile Ile Thr Lys Lys Asp Val	
730 735 740	
ctg aga cat atg gcc cag atg gca aac cag gac ccc gaa tcc atc atg	2549
Leu Arg His Met Ala Gln Met Ala Asn Gln Asp Pro Glu Ser Ile Met	
745 750 755	
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Phe Asn *	
760	
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tccaaacagg ctacccaatg ttactactta ttttctctc caggtcttat cagatacggc	3558
tgtggagagg atgaggcata tgcgttgtca gttggaatcc ctccaaatgg attgcaagag	3618

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attttatata gccaatgttg gcaactggga tctttgtatt tgaacttaac gacacattta 3798
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cagcttgat ccattgactg gaagtctgtc acgtggctcc ccctagccgc acactagtgt 4338
gggaaggaaa atattgagct aggcacatta ctctctgaac gaaattcata ttatcttatt 4398
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<210> 32

<211> 760

<212> PRT

<213> Homo sapiens

<400> 32

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 20          25          30
Ile Asp Trp Leu Arg Glu Lys Ser Arg Asp Thr Asp Arg His Arg Lys
 35          40          45
Ile Thr Ser Lys Ser Lys Glu Ser Ile Trp Glu Phe Ile Lys Ser Leu
 50          55          60
Leu Asp Ala Trp Ser Gly Trp Val Val Met Leu Leu Ile Gly Leu Leu
 65          70          75          80
Ala Gly Thr Leu Ala Gly Val Ile Asp Leu Ala Val Asp Trp Met Thr
 85          90          95
Asp Leu Lys Glu Gly Val Cys Leu Ser Ala Phe Trp Tyr Ser His Glu
100          105          110
Gln Cys Cys Trp Thr Ser Asn Glu Thr Thr Phe Glu Asp Arg Asp Lys
115          120          125
Cys Pro Leu Trp Gln Lys Trp Ser Glu Leu Leu Val Asn Gln Ser Glu
130          135          140
Gly Ala Ser Ala Tyr Ile Leu Asn Tyr Leu Met Tyr Ile Leu Trp Ala
145          150          155          160
Leu Leu Phe Ala Phe Leu Ala Val Ser Leu Val Arg Val Phe Ala Pro
165          170          175
Tyr Ala Cys Gly Ser Gly Ile Pro Glu Ile Lys Thr Ile Leu Ser Gly
180          185          190
Phe Ile Ile Arg Gly Tyr Leu Gly Lys Trp Thr Leu Leu Ile Lys Thr
195          200          205
Val Thr Leu Val Leu Val Val Ser Ser Gly Leu Ser Leu Gly Lys Glu
210          215          220
Gly Pro Leu Val His Val Ala Cys Cys Cys Gly Asn Phe Phe Ser Ser
225          230          235          240
Leu Phe Ser Lys Tyr Ser Lys Asn Glu Gly Lys Arg Arg Glu Val Leu
245          250          255
Ser Ala Ala Ala Ala Ala Gly Val Ser Val Ala Phe Gly Ala Pro Ile
260          265          270
Gly Gly Val Leu Phe Ser Leu Glu Glu Val Ser Tyr Tyr Phe Pro Leu
275          280          285
Lys Thr Leu Trp Arg Ser Phe Phe Ala Ala Leu Val Ala Ala Phe Thr
290          295          300
Leu Arg Ser Ile Asn Pro Phe Gly Asn Ser Arg Leu Val Leu Phe Tyr
305          310          315          320

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<213> Homo sapiens

<220>

<221> CDS

<222> (306)...(1400)

<221> misc\_feature

<222> (1)...(3725)

<223> n = A,T,C or G

<400> 33

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ccatcgatcc gggaggggccc cgggttccct tgctttgccg ccgggagcgg cgcacgcagc 120
cccgcactcg cctaccgggc cccgggcccgg ggcgcggccc atgcggctgg gggcggagggc 180
tgggagcggg tggctggggc cggaggcccg ggcccgggcg gtgattggcc gcctgctggc 240
cgcgactgag gcccgggagg cgggcgggga gcgcaggcgg agctcgctgc cgccgagctg 300
agaag atg ctg ctg tcc ctg gtg ctc cac acg tac tcc atg cgc tac ctg 350
Met Leu Leu Ser Leu Val Leu His Thr Tyr Ser Met Arg Tyr Leu
1 5 10 15
```

```
ctg ccc agc gtc gtg ctc ctg ggc acg gcg ccc acc tac gtg ttg gcc 398
Leu Pro Ser Val Val Leu Leu Gly Thr Ala Pro Thr Tyr Val Leu Ala
20 25 30
```

```
tgg ggg gtc tgg cgg ctg ctc tcc gcc ttc ctg ccc gcc cgc ttc tac 446
Trp Gly Val Trp Arg Leu Leu Ser Ala Phe Leu Pro Ala Arg Phe Tyr
35 40 45
```

```
caa gcg ctg gac gac cgg ctc tac tgc gtc tac cag agc atg gtg ctc 494
Gln Ala Leu Asp Asp Arg Leu Tyr Cys Val Tyr Gln Ser Met Val Leu
50 55 60
```

```
ttc ttc ttc gag aat tac acc ggg gtc cag ata ttg cta tat gga gat 542
Phe Phe Phe Glu Asn Tyr Thr Gly Val Gln Ile Leu Leu Tyr Gly Asp
65 70 75
```

```
ttg cca aaa aat aaa gaa aat ata ata tat tta gca aat cat caa agc 590
Leu Pro Lys Asn Lys Glu Asn Ile Ile Tyr Leu Ala Asn His Gln Ser
80 85 90 95
```

```
aca gtt gac tgg att gtt gct gac atc ttg gcc atc agg cag aat gcg 638
Thr Val Asp Trp Ile Val Ala Asp Ile Leu Ala Ile Arg Gln Asn Ala
100 105 110
```

```
cta gga cat gtg cgc tac gtg ctg aaa gaa ggg tta aaa tgg ctg cca 686
Leu Gly His Val Arg Tyr Val Leu Lys Glu Gly Leu Lys Trp Leu Pro
115 120 125
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ttg tat ggg tgt tac ttt gct cag cat gga gga atc tat gta aag cgc 734
Leu Tyr Gly Cys Tyr Phe Ala Gln His Gly Gly Ile Tyr Val Lys Arg
130 135 140
```

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agt gcc aaa ttt aac gag aaa gag atg cga aac aag ttg cag agc tac 782
Ser Ala Lys Phe Asn Glu Lys Glu Met Arg Asn Lys Leu Gln Ser Tyr
145 150 155
```

```
gtg gac gca gga act cca atg tat ctt gtg att ttt cca gaa ggt aca 830
Val Asp Ala Gly Thr Pro Met Tyr Leu Val Ile Phe Pro Glu Gly Thr
160 165 170 175
```

```
agg tat aat cca gag caa aca aaa gtc ctt tca gct agt cag gca ttt 878
```

Arg	Tyr	Asn	Pro	Glu	Gln	Thr	Lys	Val	Leu	Ser	Ala	Ser	Gln	Ala	Phe		
				180					185					190			
gct	gcc	caa	cgt	ggc	ctt	gca	gta	tta	aaa	cat	gtg	cta	aca	cca	cga	926	
Ala	Ala	Gln	Arg	Gly	Leu	Ala	Val	Leu	Lys	His	Val	Leu	Thr	Pro	Arg		
			195					200					205				
ata	aag	gca	act	cac	gtt	gct	ttt	gat	tgc	atg	aag	aat	tat	tta	gat	974	
Ile	Lys	Ala	Thr	His	Val	Ala	Phe	Asp	Cys	Met	Lys	Asn	Tyr	Leu	Asp		
		210					215					220					
gca	att	tat	gat	gtt	acg	gtg	gtt	tat	gaa	ggg	aaa	gac	gat	gga	ggg	1022	
Ala	Ile	Tyr	Asp	Val	Thr	Val	Val	Tyr	Glu	Gly	Lys	Asp	Asp	Gly	Gly		
	225					230					235						
cag	cga	aga	gag	tca	ccg	acc	atg	acg	gaa	ttt	ctc	tgc	aaa	gaa	tgt	1070	
Gln	Arg	Arg	Glu	Ser	Pro	Thr	Met	Thr	Glu	Phe	Leu	Cys	Lys	Glu	Cys		
240					245				250					255			
cca	aaa	att	cat	att	cac	att	gat	cgt	atc	gac	aaa	aaa	gat	gtc	cca	1118	
Pro	Lys	Ile	His	Ile	His	Ile	Asp	Arg	Ile	Asp	Lys	Lys	Asp	Val	Pro		
			260					265						270			
gaa	gaa	caa	gaa	cat	atg	aga	aga	tgg	ctg	cat	gaa	cgt	ttc	gaa	atc	1166	
Glu	Glu	Gln	Glu	His	Met	Arg	Arg	Trp	Leu	His	Glu	Arg	Phe	Glu	Ile		
			275					280					285				
aaa	gat	aag	atg	ctt	ata	gaa	ttt	tat	gag	tca	cca	gat	cca	gaa	aga	1214	
Lys	Asp	Lys	Met	Leu	Ile	Glu	Phe	Tyr	Glu	Ser	Pro	Asp	Pro	Glu	Arg		
		290					295					300					
aga	aaa	aga	ttt	cct	ggg	aaa	agt	gtt	aat	tcc	aaa	tta	agt	atc	aag	1262	
Arg	Lys	Arg	Phe	Pro	Gly	Lys	Ser	Val	Asn	Ser	Lys	Leu	Ser	Ile	Lys		
	305					310					315						
aag	act	tta	cca	tca	atg	ttg	atc	tta	agt	ggg	ttg	act	gca	ggc	atg	1310	
Lys	Thr	Leu	Pro	Ser	Met	Leu	Ile	Leu	Ser	Gly	Leu	Thr	Ala	Gly	Met		
320					325					330				335			
ctt	atg	acc	gat	gct	gga	agg	aag	ctg	tat	gtg	aac	acc	tgg	ata	tat	1358	
Leu	Met	Thr	Asp	Ala	Gly	Arg	Lys	Leu	Tyr	Val	Asn	Thr	Trp	Ile	Tyr		
				340				345						350			
gga	acc	cta	ctt	ggc	tgc	ctg	tgg	gtt	act	att	aaa	gca	tag			1400	
Gly	Thr	Leu	Leu	Gly	Cys	Leu	Trp	Val	Thr	Ile	Lys	Ala	*				
		355					360										
acaagtagct	gtctccagac	agtgggatgt	gctacattgt	ctatTTTTTgg	cggctgcaca	1460											
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<210> 34

<211> 364

<212> PRT

<213> Homo sapiens

<400> 34

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20          25          30
Gly Val Trp Arg Leu Leu Ser Ala Phe Leu Pro Ala Arg Phe Tyr Gln
35          40          45
Ala Leu Asp Asp Arg Leu Tyr Cys Val Tyr Gln Ser Met Val Leu Phe
50          55          60
Phe Phe Glu Asn Tyr Thr Gly Val Gln Ile Leu Leu Tyr Gly Asp Leu
65          70          75          80
Pro Lys Asn Lys Glu Asn Ile Ile Tyr Leu Ala Asn His Gln Ser Thr
85          90          95
Val Asp Trp Ile Val Ala Asp Ile Leu Ala Ile Arg Gln Asn Ala Leu
100         105         110
Gly His Val Arg Tyr Val Leu Lys Glu Gly Leu Lys Trp Leu Pro Leu
115         120         125
Tyr Gly Cys Tyr Phe Ala Gln His Gly Gly Ile Tyr Val Lys Arg Ser
130         135         140
Ala Lys Phe Asn Glu Lys Glu Met Arg Asn Lys Leu Gln Ser Tyr Val
145         150         155         160
Asp Ala Gly Thr Pro Met Tyr Leu Val Ile Phe Pro Glu Gly Thr Arg
165         170         175
Tyr Asn Pro Glu Gln Thr Lys Val Leu Ser Ala Ser Gln Ala Phe Ala
180         185         190
Ala Gln Arg Gly Leu Ala Val Leu Lys His Val Leu Thr Pro Arg Ile
195         200         205
Lys Ala Thr His Val Ala Phe Asp Cys Met Lys Asn Tyr Leu Asp Ala
210         215         220
Ile Tyr Asp Val Thr Val Val Tyr Glu Gly Lys Asp Asp Gly Gly Gln

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225					230					235				240
Arg	Arg	Glu	Ser	Pro	Thr	Met	Thr	Glu	Phe	Leu	Cys	Lys	Glu	Cys
				245					250					255
Lys	Ile	His	Ile	His	Ile	Asp	Arg	Ile	Asp	Lys	Lys	Asp	Val	Pro
			260					265					270	
Glu	Gln	Glu	His	Met	Arg	Arg	Trp	Leu	His	Glu	Arg	Phe	Glu	Ile
		275					280					285		Lys
Asp	Lys	Met	Leu	Ile	Glu	Phe	Tyr	Glu	Ser	Pro	Asp	Pro	Glu	Arg
	290					295					300			Arg
Lys	Arg	Phe	Pro	Gly	Lys	Ser	Val	Asn	Ser	Lys	Leu	Ser	Ile	Lys
305					310					315				320
Thr	Leu	Pro	Ser	Met	Leu	Ile	Leu	Ser	Gly	Leu	Thr	Ala	Gly	Met
				325					330					335
Met	Thr	Asp	Ala	Gly	Arg	Lys	Leu	Tyr	Val	Asn	Thr	Trp	Ile	Tyr
			340					345					350	Gly
Thr	Leu	Leu	Gly	Cys	Leu	Trp	Val	Thr	Ile	Lys	Ala			
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 <212> DNA  
 <213> Homo sapiens

<220>  
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 <222> (377)...(1594)

<400> 35  
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 atttattcct tgggcgctgc caggtgtctg ccgccttcac ccagaaaccg atgatgttcg 180  
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 actggttggg ttaatctttg gctacctaata aactgggtgc attgctgact gggtcggccg 300  
 gcggcctgtg ctgctgtttt ccatcatctt cattctgata tttggactga ctgtggcact 360  
 gtcagtgaat gtgaca atg ttc agc aca ctc agg ttc ttt gaa gga ttt tgc 412  
 Met Phe Ser Thr Leu Arg Phe Phe Glu Gly Phe Cys  
 1 5 10

ctg gct gga atc att ctc acc ttg tat gct tta cga ata gag ctg tgc 460  
 Leu Ala Gly Ile Ile Leu Thr Leu Tyr Ala Leu Arg Ile Glu Leu Cys  
 15 20 25

ccc cct gga aaa cgg ttc atg att acg atg gtg gcg agc ttc gtg gcc 508  
 Pro Pro Gly Lys Arg Phe Met Ile Thr Met Val Ala Ser Phe Val Ala  
 30 35 40

atg gcg ggc cag ttc ctc atg cct ggg cta gcc gcc ctg tgc cgg gat 556  
 Met Ala Gly Gln Phe Leu Met Pro Gly Leu Ala Ala Leu Cys Arg Asp  
 45 50 55 60

tgg cag gtg ctg cag gcc ctc atc atc tgc ccc ttc ctg ctc atg ctg 604  
 Trp Gln Val Leu Gln Ala Leu Ile Ile Cys Pro Phe Leu Leu Met Leu  
 65 70 75

ctc tac tgg tcg ata ttc ccc gag tcc ctc cgg tgg cta atg gcc acc 652  
 Leu Tyr Trp Ser Ile Phe Pro Glu Ser Leu Arg Trp Leu Met Ala Thr  
 80 85 90

cag cag ttt gag tct gca aag agg ctg atc ctc cac ttc aca cag aag 700  
 Gln Gln Phe Glu Ser Ala Lys Arg Leu Ile Leu His Phe Thr Gln Lys



95	100	105	
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gag aaa gag ctt tcc cgg agg ccc aag aag gtc tgc atc gtg aag gtg Glu Lys Glu Leu Ser Arg Arg Pro Lys Lys Val Cys Ile Val Lys Val 125 130 135 140			796
gtg ggg aca cgg aac ctg tgg aag aac att gtg gtc ctg tgt gtg aac Val Gly Thr Arg Asn Leu Trp Lys Asn Ile Val Val Leu Cys Val Asn 145 150 155			844
tcg ctg acg ggg tac ggg atc cac cac tgc ttt gcc agg agc atg atg Ser Leu Thr Gly Tyr Gly Ile His His Cys Phe Ala Arg Ser Met Met 160 165 170			892
ggc cac gag gtg aag gtg ccg ctc ctg gag aac ttc tat gct gac tac Gly His Glu Val Lys Val Pro Leu Leu Glu Asn Phe Tyr Ala Asp Tyr 175 180 185			940
tat acc acg gcc agc atc gcg ctg gtg tcc tgc ctg gcc atg tgc gtg Tyr Thr Thr Ala Ser Ile Ala Leu Val Ser Cys Leu Ala Met Cys Val 190 195 200			988
gtg gtc cga ttc ctc ggg cgc agg gga ggg ctg ctg ctc ttc atg atc Val Val Arg Phe Leu Gly Arg Arg Gly Gly Leu Leu Leu Phe Met Ile 205 210 215 220			1036
ctc acc gcc ctg gcc tcg ctc ctg cag ctc ggc ctc ctc aac ctg att Leu Thr Ala Leu Ala Ser Leu Leu Gln Leu Gly Leu Leu Asn Leu Ile 225 230 235			1084
gga aag tac agc cag cac cca gac tca ggg atg agt gac agc gtc aag Gly Lys Tyr Ser Gln His Pro Asp Ser Gly Met Ser Asp Ser Val Lys 240 245 250			1132
gac aaa ttt tcc atc gcg ttt tcc atc gtg ggc atg ttt gcc tcc cat Asp Lys Phe Ser Ile Ala Phe Ser Ile Val Gly Met Phe Ala Ser His 255 260 265			1180
gcg gtg ggg agc ctc agc gtg ttc ttc tgt gcg gag atc acc ccg acg Ala Val Gly Ser Leu Ser Val Phe Phe Cys Ala Glu Ile Thr Pro Thr 270 275 280			1228
gtg ata agg tgt ggc ggg ctg ggg ctg gtg ctg gcc agc gcg ggc ttc Val Ile Arg Cys Gly Gly Leu Gly Leu Val Leu Ala Ser Ala Gly Phe 285 290 295 300			1276
ggc atg ctg acg gca ccc atc atc gag ctg cac aac cag aaa ggc tac Gly Met Leu Thr Ala Pro Ile Ile Glu Leu His Asn Gln Lys Gly Tyr 305 310 315			1324
ttc ctg cac cac atc atc ttt gcc tgc tgc acg ctc atc tgc atc atc Phe Leu His His Ile Ile Phe Ala Cys Cys Thr Leu Ile Cys Ile Ile 320 325 330			1372
tgc atc ctc ctg ctg ccc gag agc agg gac cag aac ctg cct gag aac Cys Ile Leu Leu Leu Pro Glu Ser Arg Asp Gln Asn Leu Pro Glu Asn 335 340 345			1420

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att tct aac ggg gag cac tac acg cgc cag ccg ctg ctg ccg cac aag 1468
Ile Ser Asn Gly Glu His Tyr Thr Arg Gln Pro Leu Leu Pro His Lys
350 355 360

aag ggg gag cag cca ctg ctg ctc acc aac gcc gag ctc aag gac tac 1516
Lys Gly Glu Gln Pro Leu Leu Leu Thr Asn Ala Glu Leu Lys Asp Tyr
365 370 375 380

tcg ggc ctc cac gat gcc gca gcc gcg ggt gac aca ctg ccc gag ggt 1564
Ser Gly Leu His Asp Ala Ala Ala Ala Gly Asp Thr Leu Pro Glu Gly
385 390 395

gcc acg gcc aac ggc atg aag gcc atg tag cccggcctgc ggaacccggg 1614
Ala Thr Ala Asn Gly Met Lys Ala Met *
400 405

gctccaggggt ctgggggcagc ttggggcacag gtttacagac cagggaccga acacgcagcc 1674
aggggtggga aagctgcctc agccaagctg agcctctcaa ctggtgtggg gaaatcctgt 1734
ctttccaaaa gtccaaggag cgcgggtcgg aggagacaaa ctctttggaa ataacccttt 1794
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<210> 36
<211> 405
<212> PRT
<213> Homo sapiens

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Arg Phe Met Ile Thr Met Val Ala Ser Phe Val Ala Met Ala Gly Gln
35 40 45
Phe Leu Met Pro Gly Leu Ala Ala Leu Cys Arg Asp Trp Gln Val Leu
50 55 60
Gln Ala Leu Ile Ile Cys Pro Phe Leu Leu Met Leu Leu Tyr Trp Ser
65 70 75 80
Ile Phe Pro Glu Ser Leu Arg Trp Leu Met Ala Thr Gln Gln Phe Glu
85 90 95
Ser Ala Lys Arg Leu Ile Leu His Phe Thr Gln Lys Asn Arg Met Asn
100 105 110
Pro Glu Gly Asp Ile Lys Gly Val Ile Pro Glu Leu Glu Lys Glu Leu
115 120 125
Ser Arg Arg Pro Lys Lys Val Cys Ile Val Lys Val Val Gly Thr Arg
130 135 140
Asn Leu Trp Lys Asn Ile Val Val Leu Cys Val Asn Ser Leu Thr Gly
145 150 155 160
Tyr Gly Ile His His Cys Phe Ala Arg Ser Met Met Gly His Glu Val
165 170 175
Lys Val Pro Leu Leu Glu Asn Phe Tyr Ala Asp Tyr Tyr Thr Thr Ala
180 185 190
Ser Ile Ala Leu Val Ser Cys Leu Ala Met Cys Val Val Val Arg Phe
195 200 205
Leu Gly Arg Arg Gly Gly Leu Leu Leu Phe Met Ile Leu Thr Ala Leu
210 215 220
Ala Ser Leu Leu Gln Leu Gly Leu Leu Asn Leu Ile Gly Lys Tyr Ser
225 230 235 240
Gln His Pro Asp Ser Gly Met Ser Asp Ser Val Lys Asp Lys Phe Ser
245 250 255

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Ile	Ala	Phe	Ser	Ile	Val	Gly	Met	Phe	Ala	Ser	His	Ala	Val	Gly	Ser	
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Leu	Ser	Val	Phe	Phe	Cys	Ala	Glu	Ile	Thr	Pro	Thr	Val	Ile	Arg	Cys	
		275					280					285				
Gly	Gly	Leu	Gly	Leu	Val	Leu	Ala	Ser	Ala	Gly	Phe	Gly	Met	Leu	Thr	
	290					295				300						
Ala	Pro	Ile	Ile	Glu	Leu	His	Asn	Gln	Lys	Gly	Tyr	Phe	Leu	His	His	
305					310					315					320	
Ile	Ile	Phe	Ala	Cys	Cys	Thr	Leu	Ile	Cys	Ile	Ile	Cys	Ile	Leu	Leu	
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Leu	Pro	Glu	Ser	Arg	Asp	Gln	Asn	Leu	Pro	Glu	Asn	Ile	Ser	Asn	Gly	
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Glu	His	Tyr	Thr	Arg	Gln	Pro	Leu	Leu	Pro	His	Lys	Lys	Gly	Glu	Gln	
	355						360					365				
Pro	Leu	Leu	Leu	Thr	Asn	Ala	Glu	Leu	Lys	Asp	Tyr	Ser	Gly	Leu	His	
	370				375						380					
Asp	Ala	Ala	Ala	Ala	Gly	Asp	Thr	Leu	Pro	Glu	Gly	Ala	Thr	Ala	Asn	
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Gly	Met	Lys	Ala	Met												
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 <212> DNA  
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	Met	Trp	Pro	Gly	Asn	Ala	Trp	Arg	Ala	Ala	Leu	Phe	Trp	Val	Pro	
	1				5					10					15	
cgc	ggc	cgc	cgc	gca	cag	tca	gcg	ctg	gcc	cag	ctg	cgt	ggc	att	ctg	96
Arg	Gly	Arg	Arg	Ala	Gln	Ser	Ala	Leu	Ala	Gln	Leu	Arg	Gly	Ile	Leu	
				20					25					30		
gag	ggg	gag	ctg	gaa	ggc	atc	cgc	gga	gct	ggc	act	tgg	aag	agt	gag	144
Glu	Gly	Glu	Leu	Glu	Gly	Ile	Arg	Gly	Ala	Gly	Thr	Trp	Lys	Ser	Glu	
			35					40					45			
cgg	gtc	atc	acg	tcc	cgt	cag	ggg	ccg	cac	atc	cgc	gtg	gac	ggc	gtc	192
Arg	Val	Ile	Thr	Ser	Arg	Gln	Gly	Pro	His	Ile	Arg	Val	Asp	Gly	Val	
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Ser	Gly	Gly	Ile	Leu	Asn	Phe	Cys	Ala	Asn	Asn	Tyr	Leu	Gly	Leu	Ser	
	65					70					75					
agc	cac	cct	gag	gtg	att	cag	gca	ggt	ctg	cag	gct	ctg	gag	gag	ttt	288
Ser	His	Pro	Glu	Val	Ile	Gln	Ala	Gly	Leu	Gln	Ala	Leu	Glu	Glu	Phe	
	80				85					90					95	
gga	gct	ggc	ctt	agc	tcg	gtc	cgc	ttc	atc	tgt	gga	acc	cag	agc	atc	336
Gly	Ala	Gly	Leu	Ser	Ser	Val	Arg	Phe	Ile	Cys	Gly	Thr	Gln	Ser	Ile	
			100						105					110		
cac	aag	aat	cta	gaa	gca	aaa	ata	gcc	cgc	ttc	cac	cag	cgg	gag	gat	384

His	Lys	Asn	Leu	Glu	Ala	Lys	Ile	Ala	Arg	Phe	His	Gln	Arg	Glu	Asp		
			115					120					125				
gcc	atc	ctc	tat	ccc	agc	tgt	tat	gac	gcc	aac	gcc	ggc	ctc	ttt	gag	432	
Ala	Ile	Leu	Tyr	Pro	Ser	Cys	Tyr	Asp	Ala	Asn	Ala	Gly	Leu	Phe	Glu		
		130					135					140					
gcc	ctg	ctg	acc	cca	gag	gac	gca	gtc	ctg	tcg	gac	gag	ctg	aac	cat	480	
Ala	Leu	Leu	Thr	Pro	Glu	Asp	Ala	Val	Leu	Ser	Asp	Glu	Leu	Asn	His		
		145				150					155						
gcc	tcc	atc	atc	gac	ggc	atc	cgg	ctg	tgc	aag	gcc	cac	aag	tac	cgc	528	
Ala	Ser	Ile	Ile	Asp	Gly	Ile	Arg	Leu	Cys	Lys	Ala	His	Lys	Tyr	Arg		
160					165					170					175		
tat	cgc	cac	ctg	gac	atg	gcc	gac	cta	gaa	gcc	aag	ctg	cag	gag	gcc	576	
Tyr	Arg	His	Leu	Asp	Met	Ala	Asp	Leu	Glu	Ala	Lys	Leu	Gln	Glu	Ala		
				180					185					190			
cag	aag	cat	cgg	ctg	cgc	ctg	gtg	gcc	acc	gat	ggg	gcc	ttt	tcc	atg	624	
Gln	Lys	His	Arg	Leu	Arg	Leu	Val	Ala	Thr	Asp	Gly	Ala	Phe	Ser	Met		
			195				200						205				
gat	ggc	gac	atc	gca	ccc	ctg	cag	gag	atc	tgc	tgc	ctc	gcc	tct	aga	672	
Asp	Gly	Asp	Ile	Ala	Pro	Leu	Gln	Glu	Ile	Cys	Cys	Leu	Ala	Ser	Arg		
		210					215					220					
tat	ggg	gcc	ctg	gtc	ttc	atg	gat	gaa	tgc	cat	gcc	act	ggg	ttc	ctg	720	
Tyr	Gly	Ala	Leu	Val	Phe	Met	Asp	Glu	Cys	His	Ala	Thr	Gly	Phe	Leu		
		225				230					235						
ggg	ccc	aca	gga	cgg	ggc	aca	gat	gag	ctg	ctg	ggg	gtg	atg	gac	cag	768	
Gly	Pro	Thr	Gly	Arg	Gly	Thr	Asp	Glu	Leu	Leu	Gly	Val	Met	Asp	Gln		
240					245					250					255		
gtc	acc	atc	atc	aac	tcc	acc	ctg	ggg	aag	gcc	ctg	ggg	gga	gca	tca	816	
Val	Thr	Ile	Ile	Asn	Ser	Thr	Leu	Gly	Lys	Ala	Leu	Gly	Gly	Ala	Ser		
				260					265					270			
ggg	ggc	tac	acg	aca	ggg	cct	ggg	ccc	ctg	gtg	tca	ctg	ctg	cgg	cag	864	
Gly	Gly	Tyr	Thr	Thr	Gly	Pro	Gly	Pro	Leu	Val	Ser	Leu	Leu	Arg	Gln		
			275				280						285				
cgc	gcc	cgg	cca	tac	ctc	ttc	tcc	aac	agt	ctg	cca	cct	gct	gtc	gtt	912	
Arg	Ala	Arg	Pro	Tyr	Leu	Phe	Ser	Asn	Ser	Leu	Pro	Pro	Ala	Val	Val		
		290					295					300					
ggc	tgc	gcc	tcc	aag	gcc	cta	gat	ctg	ctg	atg	ggg	agt	aac	acc	att	960	
Gly	Cys	Ala	Ser	Lys	Ala	Leu	Asp	Leu	Leu	Met	Gly	Ser	Asn	Thr	Ile		
		305				310					315						
gtc	cag	tct	atg	gct	gcc	aag	acc	cag	agg	ttc	cgt	agt	aag	atg	gaa	1008	
Val	Gln	Ser	Met	Ala	Ala	Lys	Thr	Gln	Arg	Phe	Arg	Ser	Lys	Met	Glu		
320					325					330					335		
gct	gct	ggc	ttc	act	atc	tca	gga	gcc	agt	cac	ccc	atc	tgc	cct	gtg	1056	
Ala	Ala	Gly	Phe	Thr	Ile	Ser	Gly	Ala	Ser	His	Pro	Ile	Cys	Pro	Val		
				340					345					350			
atg	ctg	ggg	gat	gcc	cgg	ctg	gcc	tct	cgc	atg	gcg	gat	gac	atg	ctg	1104	
Met	Leu	Gly	Asp	Ala	Arg	Leu	Ala	Ser	Arg	Met	Ala	Asp	Asp	Met	Leu		

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aag	aga	ggc	atc	ttt	gtc	atc	ggg	ttc	agc	tac	ccc	gtg	gtc	ccc	aag	1152
Lys	Arg	Gly	Ile	Phe	Val	Ile	Gly	Phe	Ser	Tyr	Pro	Val	Val	Pro	Lys	
		370					375					380				
ggc	aag	gcc	cgg	atc	cgg	gta	cag	atc	tca	gca	gtg	cat	agc	gag	gaa	1200
Gly	Lys	Ala	Arg	Ile	Arg	Val	Gln	Ile	Ser	Ala	Val	His	Ser	Glu	Glu	
		385				390					395					
gac	att	gac	cgc	tgc	gtg	gag	gcc	ttc	gtg	gaa	gtg	ggg	cga	ctg	cac	1248
Asp	Ile	Asp	Arg	Cys	Val	Glu	Ala	Phe	Val	Glu	Val	Gly	Arg	Leu	His	
400					405					410					415	
ggg	gca	ctg	ccc	tga	gctctgggta	aggacgagaa	gagccaaggt	ccgcctgctg								1303
Gly	Ala	Leu	Pro	*												

ccacaggggtc	aaaggaggtt	ttcgatcagc	ccagaccaga	ggctctgagc	cctgaaccaa	1363
agtcccagag	ctgggctggg	acgtgacctg	tgctgagggc	tgtgagaatg	tgaacaaca	1423
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 <212> PRT  
 <213> Homo sapiens

<400> 38

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			20					25					30		
Gly	Glu	Leu	Glu	Gly	Ile	Arg	Gly	Ala	Gly	Thr	Trp	Lys	Ser	Glu	Arg
		35					40					45			
Val	Ile	Thr	Ser	Arg	Gln	Gly	Pro	His	Ile	Arg	Val	Asp	Gly	Val	Ser
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Gly	Gly	Ile	Leu	Asn	Phe	Cys	Ala	Asn	Asn	Tyr	Leu	Gly	Leu	Ser	Ser
65				70						75				80	
His	Pro	Glu	Val	Ile	Gln	Ala	Gly	Leu	Gln	Ala	Leu	Glu	Glu	Phe	Gly
				85					90					95	
Ala	Gly	Leu	Ser	Ser	Val	Arg	Phe	Ile	Cys	Gly	Thr	Gln	Ser	Ile	His
			100				105						110		
Lys	Asn	Leu	Glu	Ala	Lys	Ile	Ala	Arg	Phe	His	Gln	Arg	Glu	Asp	Ala
		115					120					125			
Ile	Leu	Tyr	Pro	Ser	Cys	Tyr	Asp	Ala	Asn	Ala	Gly	Leu	Phe	Glu	Ala
		130				135					140				
Leu	Leu	Thr	Pro	Glu	Asp	Ala	Val	Leu	Ser	Asp	Glu	Leu	Asn	His	Ala
145				150						155				160	
Ser	Ile	Ile	Asp	Gly	Ile	Arg	Leu	Cys	Lys	Ala	His	Lys	Tyr	Arg	Tyr
			165						170					175	
Arg	His	Leu	Asp	Met	Ala	Asp	Leu	Glu	Ala	Lys	Leu	Gln	Glu	Ala	Gln
		180						185					190		
Lys	His	Arg	Leu	Arg	Leu	Val	Ala	Thr	Asp	Gly	Ala	Phe	Ser	Met	Asp
		195					200					205			
Gly	Asp	Ile	Ala	Pro	Leu	Gln	Glu	Ile	Cys	Cys	Leu	Ala	Ser	Arg	Tyr
		210				215					220				
Gly	Ala	Leu	Val	Phe	Met	Asp	Glu	Cys	His	Ala	Thr	Gly	Phe	Leu	Gly
225				230						235				240	
Pro	Thr	Gly	Arg	Gly	Thr	Asp	Glu	Leu	Leu	Gly	Val	Met	Asp	Gln	Val
				245					250					255	
Thr	Ile	Ile	Asn	Ser	Thr	Leu	Gly	Lys	Ala	Leu	Gly	Gly	Ala	Ser	Gly



ggg caa gtc ttg ttg gat gtc gtc ttc aag cat cta gat ttg act gag	969
Gly Gln Val Leu Leu Asp Val Val Phe Lys His Leu Asp Leu Thr Glu	
55 60 65	
cag gac tat ttt ggt tta cag ttg gct gat gat tcc aca gat aac cca	1017
Gln Asp Tyr Phe Gly Leu Gln Leu Ala Asp Asp Ser Thr Asp Asn Pro	
70 75 80	
agg tgg ctg gat cca aac aaa cca ata agg aag cag cta aag aga gga	1065
Arg Trp Leu Asp Pro Asn Lys Pro Ile Arg Lys Gln Leu Lys Arg Gly	
85 90 95	
tct cct tac agt ttg aac ttt aga gtc aaa ttt ttt gta agt gac ccc	1113
Ser Pro Tyr Ser Leu Asn Phe Arg Val Lys Phe Phe Val Ser Asp Pro	
100 105 110	
aac aag tta caa gaa gaa tat aca agg tac cag tat ttt ttg caa att	1161
Asn Lys Leu Gln Glu Glu Tyr Thr Arg Tyr Gln Tyr Phe Leu Gln Ile	
115 120 125 130	
aaa caa gac att ctt act gga aga tta ccc tgt cct tct aat act gct	1209
Lys Gln Asp Ile Leu Thr Gly Arg Leu Pro Cys Pro Ser Asn Thr Ala	
135 140 145	
gcc ctt tta gct tca ttt gct gtt cag tct gaa ctt gga gac tac gat	1257
Ala Leu Leu Ala Ser Phe Ala Val Gln Ser Glu Leu Gly Asp Tyr Asp	
150 155 160	
cag tca gag aac ttg tca ggc tac ctc tca gat tat tct ttc att cct	1305
Gln Ser Glu Asn Leu Ser Gly Tyr Leu Ser Asp Tyr Ser Phe Ile Pro	
165 170 175	
aat caa cct caa gat ttt gaa aaa gaa att gca aaa tta cat cag caa	1353
Asn Gln Pro Gln Asp Phe Glu Lys Glu Ile Ala Lys Leu His Gln Gln	
180 185 190	
cac ata ggc tta tct cct gca gaa gca gaa ttt aat tac cta aac aca	1401
His Ile Gly Leu Ser Pro Ala Glu Ala Glu Phe Asn Tyr Leu Asn Thr	
195 200 205 210	
gca cgt acc tta gaa ctc tat gga gtt gaa ttc cac tat gca agg gat	1449
Ala Arg Thr Leu Glu Leu Tyr Gly Val Glu Phe His Tyr Ala Arg Asp	
215 220 225	
cag agt aac aat gaa att atg att gga gtg atg tca gga gga att ctg	1497
Gln Ser Asn Asn Glu Ile Met Ile Gly Val Met Ser Gly Gly Ile Leu	
230 235 240	
att tat aag aac agg gta cga atg aat acc ttt cca tgg ttg aag att	1545
Ile Tyr Lys Asn Arg Val Arg Met Asn Thr Phe Pro Trp Leu Lys Ile	
245 250 255	
gta aaa att tct ttt aag tgc aaa cag ttt ttt att caa ctt aga aaa	1593
Val Lys Ile Ser Phe Lys Cys Lys Gln Phe Phe Ile Gln Leu Arg Lys	
260 265 270	
gaa ttg cat gaa tct aga gaa aca tta ttg gga ttt aat atg gtg aat	1641
Glu Leu His Glu Ser Arg Glu Thr Leu Leu Gly Phe Asn Met Val Asn	
275 280 285 290	
tac aga gca tgt aaa aat ttg tgg aaa gca tgt gta gaa cat cac aca	1689

Tyr	Arg	Ala	Cys	Lys	Asn	Leu	Trp	Lys	Ala	Cys	Val	Glu	His	His	Thr		
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ttc	ttc	cgt	ttg	gac	aga	cca	ctt	cca	cct	caa	aag	aat	ttt	ttt	gca	1737	
Phe	Phe	Arg	Leu	Asp	Arg	Pro	Leu	Pro	Pro	Gln	Lys	Asn	Phe	Phe	Ala		
			310					315					320				
cat	tat	ttt	aca	tta	ggc	tca	aaa	ttc	cgg	tac	tgt	ggg	aga	act	gaa	1785	
His	Tyr	Phe	Thr	Leu	Gly	Ser	Lys	Phe	Arg	Tyr	Cys	Gly	Arg	Thr	Glu		
		325					330					335					
gtc	caa	tca	gtt	cag	tat	ggc	aaa	gaa	aag	gca	aat	aaa	gac	agg	gta	1833	
Val	Gln	Ser	Val	Gln	Tyr	Gly	Lys	Glu	Lys	Ala	Asn	Lys	Asp	Arg	Val		
			340				345					350					
ttt	gca	aga	tcc	cca	agt	aag	ccc	ttg	gca	cgg	aaa	tta	atg	gat	tgg	1881	
Phe	Ala	Arg	Ser	Pro	Ser	Lys	Pro	Leu	Ala	Arg	Lys	Leu	Met	Asp	Trp		
355					360					365					370		
gaa	gta	gta	agc	aga	aat	tca	ata	tct	gat	gac	agg	tta	gaa	aca	caa	1929	
Glu	Val	Val	Ser	Arg	Asn	Ser	Ile	Ser	Asp	Asp	Arg	Leu	Glu	Thr	Gln		
				375					380					385			
agt	ctt	cca	tca	cga	tct	cca	ccg	gga	act	cct	aat	cat	cga	aat	tct	1977	
Ser	Leu	Pro	Ser	Arg	Ser	Pro	Pro	Gly	Thr	Pro	Asn	His	Arg	Asn	Ser		
			390					395					400				
aca	ttc	acg	cag	gaa	gga	acc	cgg	tta	cga	cca	tct	tca	gtt	ggc	cat	2025	
Thr	Phe	Thr	Gln	Glu	Gly	Thr	Arg	Leu	Arg	Pro	Ser	Ser	Val	Gly	His		
			405				410					415					
ttg	gta	gac	cat	atg	gtt	cat	act	tcc	cca	agc	gaa	gtg	ttt	gta	aat	2073	
Leu	Val	Asp	His	Met	Val	His	Thr	Ser	Pro	Ser	Glu	Val	Phe	Val	Asn		
		420				425					430						
cag	aga	tct	ccg	tca	tca	aca	caa	gct	aat	agc	att	gtt	ctg	gaa	tca	2121	
Gln	Arg	Ser	Pro	Ser	Ser	Thr	Gln	Ala	Asn	Ser	Ile	Val	Leu	Glu	Ser		
435					440					445					450		
tca	cca	tca	caa	gag	acc	cct	gga	gat	ggg	aag	cct	cca	gct	tta	cca	2169	
Ser	Pro	Ser	Gln	Glu	Thr	Pro	Gly	Asp	Gly	Lys	Pro	Pro	Ala	Leu	Pro		
				455					460					465			
ccc	aaa	cag	tca	aag	aaa	aac	agt	tgg	aac	caa	att	cat	tat	tca	cat	2217	
Pro	Lys	Gln	Ser	Lys	Lys	Asn	Ser	Trp	Asn	Gln	Ile	His	Tyr	Ser	His		
			470					475					480				
tcg	caa	caa	gat	cta	gaa	agt	cat	att	aat	gaa	aca	ttt	gat	att	cca	2265	
Ser	Gln	Gln	Asp	Leu	Glu	Ser	His	Ile	Asn	Glu	Thr	Phe	Asp	Ile	Pro		
			485				490						495				
tct	tct	cct	gaa	aaa	ccc	act	cct	aat	ggc	ggc	att	cca	cat	gat	aat	2313	
Ser	Ser	Pro	Glu	Lys	Pro	Thr	Pro	Asn	Gly	Gly	Ile	Pro	His	Asp	Asn		
			500				505					510					
ctt	gtc	cta	atc	aga	atg	aaa	cct	gat	gaa	aat	ggg	agg	ttt	gga	ttc	2361	
Leu	Val	Leu	Ile	Arg	Met	Lys	Pro	Asp	Glu	Asn	Gly	Arg	Phe	Gly	Phe		
515					520					525					530		
aat	gta	aag	gga	gga	tat	gat	cag	aag	atg	cct	gtg	att	gtg	tct	cga	2409	
Asn	Val	Lys	Gly	Gly	Tyr	Asp	Gln	Lys	Met	Pro	Val	Ile	Val	Ser	Arg		



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gta	gca	cca	gga	aca	cct	gct	gac	ctc	tgt	gtc	cct	aga	ctg	aat	gaa	2457				
Val	Ala	Pro	Gly	Thr	Pro	Ala	Asp	Leu	Cys	Val	Pro	Arg	Leu	Asn	Glu					
			550					555					560							
ggg	gac	caa	gtt	gta	ctg	atc	aat	ggt	cgg	gac	att	gca	gaa	cac	act	2505				
Gly	Asp	Gln	Val	Val	Leu	Ile	Asn	Gly	Arg	Asp	Ile	Ala	Glu	His	Thr					
		565					570					575								
cat	gat	cag	gtt	gtg	ctg	ttt	att	aaa	gct	agt	tgt	gag	aga	cat	tct	2553				
His	Asp	Gln	Val	Val	Leu	Phe	Ile	Lys	Ala	Ser	Cys	Glu	Arg	His	Ser					
	580					585					590									
ggg	gaa	ctc	atg	ctt	cta	gtt	cga	cct	aat	gct	gta	tat	gat	gta	gtg	2601				
Gly	Glu	Leu	Met	Leu	Leu	Val	Arg	Pro	Asn	Ala	Val	Tyr	Asp	Val	Val					
595					600					605					610					
gaa	gaa	aag	cta	gaa	aat	gag	cca	gat	ttc	cag	tat	att	cct	gag	aaa	2649				
Glu	Glu	Lys	Leu	Glu	Asn	Glu	Pro	Asp	Phe	Gln	Tyr	Ile	Pro	Glu	Lys					
			615						620					625						
gcc	cca	cta	gat	agt	gtg	cat	cag	gat	gac	cat	tcc	ctg	cgg	gag	tca	2697				
Ala	Pro	Leu	Asp	Ser	Val	His	Gln	Asp	Asp	His	Ser	Leu	Arg	Glu	Ser					
			630					635					640							
atg	atc	cag	cta	gct	gag	ggg	ctt	atc	act	gga	aca	gtc	ctg	aca	cag	2745				
Met	Ile	Gln	Leu	Ala	Glu	Gly	Leu	Ile	Thr	Gly	Thr	Val	Leu	Thr	Gln					
		645					650					655								
ttt	gat	caa	ctg	tat	cgg	aaa	aaa	cct	gga	atg	aca	atg	tcc	tgt	gcc	2793				
Phe	Asp	Gln	Leu	Tyr	Arg	Lys	Lys	Pro	Gly	Met	Thr	Met	Ser	Cys	Ala					
	660					665					670									
aaa	tta	cct	cag	aat	att	tcc	aaa	aat	aga	tac	aga	gat	att	tcg	cct	2841				
Lys	Leu	Pro	Gln	Asn	Ile	Ser	Lys	Asn	Arg	Tyr	Arg	Asp	Ile	Ser	Pro					
675					680					685					690					
tat	gat	gcc	aca	cgg	gtc	att	tta	aaa	ggt	aat	gaa	gac	tac	atc	aat	2889				
Tyr	Asp	Ala	Thr	Arg	Val	Ile	Leu	Lys	Gly	Asn	Glu	Asp	Tyr	Ile	Asn					
			695						700					705						
gcg	aac	tat	ata	aat	atg	gaa	att	cct	tct	tcc	agc	att	ata	aat	cag	2937				
Ala	Asn	Tyr	Ile	Asn	Met	Glu	Ile	Pro	Ser	Ser	Ser	Ile	Ile	Asn	Gln					
			710					715					720							
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Tyr	Ile	Ala	Cys	Gln	Gly	Pro	Leu	Pro	His	Thr	Cys	Thr	Asp	Phe	Trp					
		725					730					735								
cag	atg	act	tgg	gaa	caa	ggc	tcc	tct	atg	gtt	gta	atg	ttg	acc	aca	3033				
Gln	Met	Thr	Trp	Glu	Gln	Gly	Ser	Ser	Met	Val	Val	Met	Leu	Thr	Thr					
	740					745					750									
caa	gtt	gaa	cgt	ggc	aga	gtt	aaa	tgt	cac	caa	tat	tgg	cca	gaa	ccc	3081				
Gln	Val	Glu	Arg	Gly	Arg	Val	Lys	Cys	His	Gln	Tyr	Trp	Pro	Glu	Pro					
755					760					765					770					
aca	ggc	agt	tca	tct	tat	gga	tgc	tac	caa	gtt	acc	tgc	cac	tct	gaa	3129				
Thr	Gly	Ser	Ser	Ser	Tyr	Gly	Cys	Tyr	Gln	Val	Thr	Cys	His	Ser	Glu					
				775					780					785						

gag gga aac act gcc tat atc ttc agg aag atg acc cta ttt aac caa 3177  
 Glu Gly Asn Thr Ala Tyr Ile Phe Arg Lys Met Thr Leu Phe Asn Gln  
 790 795 800

gag aaa aat gaa agt cgt cca ctc act cag atc cag tac ata gcc tgg 3225  
 Glu Lys Asn Glu Ser Arg Pro Leu Thr Gln Ile Gln Tyr Ile Ala Trp  
 805 810 815

cct gac cat gga gtc cct gat gat tcg agt gac ttt cta gat ttt gtt 3273  
 Pro Asp His Gly Val Pro Asp Asp Ser Ser Asp Phe Leu Asp Phe Val  
 820 825 830

tgt cat gta cga aac aag agg gct ggc aag gaa gaa ccc gtt gtt gtc 3321  
 Cys His Val Arg Asn Lys Arg Ala Gly Lys Glu Glu Pro Val Val Val  
 835 840 845 850

cat tgc agt gct gga atc gga aga act ggg gtt ctt att act atg gaa 3369  
 His Cys Ser Ala Gly Ile Gly Arg Thr Gly Val Leu Ile Thr Met Glu  
 855 860 865

aca gcc atg tgt ctc att gaa tgc aat cag cca gtt tat cca cta gat 3417  
 Thr Ala Met Cys Leu Ile Glu Cys Asn Gln Pro Val Tyr Pro Leu Asp  
 870 875 880

att gta aga aca atg aga gat cag cga gcc atg atg atc caa aca cct 3465  
 Ile Val Arg Thr Met Arg Asp Gln Arg Ala Met Met Ile Gln Thr Pro  
 885 890 895

agt caa tac aga ttt gta tgt gaa gct att ttg aaa gtt tat gaa gaa 3513  
 Ser Gln Tyr Arg Phe Val Cys Glu Ala Ile Leu Lys Val Tyr Glu Glu  
 900 905 910

ggc ttt gtt aaa ccc tta aca aca tca aca aat aaa taa gaaagcaaaa 3562  
 Gly Phe Val Lys Pro Leu Thr Thr Ser Thr Asn Lys \*  
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 35 40 45  
 Asp Gln Gly Gln Val Leu Leu Asp Val Val Phe Lys His Leu Asp Leu  
 50 55 60  
 Thr Glu Gln Asp Tyr Phe Gly Leu Gln Leu Ala Asp Asp Ser Thr Asp  
 65 70 75 80  
 Asn Pro Arg Trp Leu Asp Pro Asn Lys Pro Ile Arg Lys Gln Leu Lys  
 85 90 95  
 Arg Gly Ser Pro Tyr Ser Leu Asn Phe Arg Val Lys Phe Phe Val Ser  
 100 105 110  
 Asp Pro Asn Lys Leu Gln Glu Glu Tyr Thr Arg Tyr Gln Tyr Phe Leu



Val	Val	Glu	Glu	Lys	Leu	Glu	Asn	Glu	Pro	Asp	Phe	Gln	Tyr	Ile	Pro
610						615					620				
Glu	Lys	Ala	Pro	Leu	Asp	Ser	Val	His	Gln	Asp	Asp	His	Ser	Leu	Arg
625					630					635					640
Glu	Ser	Met	Ile	Gln	Leu	Ala	Glu	Gly	Leu	Ile	Thr	Gly	Thr	Val	Leu
				645					650						655
Thr	Gln	Phe	Asp	Gln	Leu	Tyr	Arg	Lys	Lys	Pro	Gly	Met	Thr	Met	Ser
			660					665					670		
Cys	Ala	Lys	Leu	Pro	Gln	Asn	Ile	Ser	Lys	Asn	Arg	Tyr	Arg	Asp	Ile
		675					680					685			
Ser	Pro	Tyr	Asp	Ala	Thr	Arg	Val	Ile	Leu	Lys	Gly	Asn	Glu	Asp	Tyr
		690				695					700				
Ile	Asn	Ala	Asn	Tyr	Ile	Asn	Met	Glu	Ile	Pro	Ser	Ser	Ser	Ile	Ile
705					710					715					720
Asn	Gln	Tyr	Ile	Ala	Cys	Gln	Gly	Pro	Leu	Pro	His	Thr	Cys	Thr	Asp
				725					730						735
Phe	Trp	Gln	Met	Thr	Trp	Glu	Gln	Gly	Ser	Ser	Met	Val	Val	Met	Leu
			740					745						750	
Thr	Thr	Gln	Val	Glu	Arg	Gly	Arg	Val	Lys	Cys	His	Gln	Tyr	Trp	Pro
		755					760					765			
Glu	Pro	Thr	Gly	Ser	Ser	Ser	Tyr	Gly	Cys	Tyr	Gln	Val	Thr	Cys	His
		770				775					780				
Ser	Glu	Glu	Gly	Asn	Thr	Ala	Tyr	Ile	Phe	Arg	Lys	Met	Thr	Leu	Phe
785					790					795					800
Asn	Gln	Glu	Lys	Asn	Glu	Ser	Arg	Pro	Leu	Thr	Gln	Ile	Gln	Tyr	Ile
				805					810						815
Ala	Trp	Pro	Asp	His	Gly	Val	Pro	Asp	Asp	Ser	Ser	Asp	Phe	Leu	Asp
			820					825					830		
Phe	Val	Cys	His	Val	Arg	Asn	Lys	Arg	Ala	Gly	Lys	Glu	Glu	Pro	Val
		835					840					845			
Val	Val	His	Cys	Ser	Ala	Gly	Ile	Gly	Arg	Thr	Gly	Val	Leu	Ile	Thr
		850				855					860				
Met	Glu	Thr	Ala	Met	Cys	Leu	Ile	Glu	Cys	Asn	Gln	Pro	Val	Tyr	Pro
865					870					875					880
Leu	Asp	Ile	Val	Arg	Thr	Met	Arg	Asp	Gln	Arg	Ala	Met	Met	Ile	Gln
				885					890						895
Thr	Pro	Ser	Gln	Tyr	Arg	Phe	Val	Cys	Glu	Ala	Ile	Leu	Lys	Val	Tyr
			900					905					910		
Glu	Glu	Gly	Phe	Val	Lys	Pro	Leu	Thr	Thr	Ser	Thr	Asn	Lys		
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 gcggccc atg gct cac ctc cgg gga ttt gca aac cag cac tct cga gtg 168  
 Met Ala His Leu Arg Gly Phe Ala Asn Gln His Ser Arg Val  
 1 5 10  
 gac cct gag gag ctc ttc acc aag ctc gac cgc att ggc aag ggc tcg 216  
 Asp Pro Glu Glu Leu Phe Thr Lys Leu Asp Arg Ile Gly Lys Gly Ser  
 15 20 25 30

ttt ggg gag gtc tac aag ggc atc gat aac cac aca aag gag gtg gtg	264
Phe Gly Glu Val Tyr Lys Gly Ile Asp Asn His Thr Lys Glu Val Val	
35 40 45	
gcc atc aag atc atc gac ctg gag gag gcc gag gat gag atc gag gac	312
Ala Ile Lys Ile Ile Asp Leu Glu Glu Ala Glu Asp Glu Ile Glu Asp	
50 55 60	
atc cag cag gag atc act gtc ctc agt cag tgc gac agc ccc tac atc	360
Ile Gln Gln Glu Ile Thr Val Leu Ser Gln Cys Asp Ser Pro Tyr Ile	
65 70 75	
acc cgc tac ttt ggc tcc tac cta aag agc acc aag cta tgg atc atc	408
Thr Arg Tyr Phe Gly Ser Tyr Leu Lys Ser Thr Lys Leu Trp Ile Ile	
80 85 90	
atg gag tac ctg ggc ggc ggc tca gca ctg gac ttg ctt aaa cca ggt	456
Met Glu Tyr Leu Gly Gly Gly Ser Ala Leu Asp Leu Leu Lys Pro Gly	
95 100 105 110	
ccc ctg gag gag aca tac att gcc acg atc ctg cgg gag att ctg aag	504
Pro Leu Glu Glu Thr Tyr Ile Ala Thr Ile Leu Arg Glu Ile Leu Lys	
115 120 125	
ggc ctg gat tat ctg cac tcc gaa cgc aag atc cac cga gac atc aaa	552
Gly Leu Asp Tyr Leu His Ser Glu Arg Lys Ile His Arg Asp Ile Lys	
130 135 140	
gct gcc aac gtg cta ctc tcg gag cag ggt gac gtg aag ctg gcg gac	600
Ala Ala Asn Val Leu Leu Ser Glu Gln Gly Asp Val Lys Leu Ala Asp	
145 150 155	
ttt ggg gta gca ggg cag ctc aca gac acg cag att aag agg aac aca	648
Phe Gly Val Ala Gly Gln Leu Thr Asp Thr Gln Ile Lys Arg Asn Thr	
160 165 170	
ttc gtg ggc acc ccc ttc tgg atg gca cct gag gtc atc aag cag tcg	696
Phe Val Gly Thr Pro Phe Trp Met Ala Pro Glu Val Ile Lys Gln Ser	
175 180 185 190	
gcc tac gac ttc aag gct gac atc tgg tcc ctg ggc atc aca gcc atc	744
Ala Tyr Asp Phe Lys Ala Asp Ile Trp Ser Leu Gly Ile Thr Ala Ile	
195 200 205	
gag ctg gcc aag ggg gag cct cca aac tct gac ctc cac ccc atg cgc	792
Glu Leu Ala Lys Gly Glu Pro Pro Asn Ser Asp Leu His Pro Met Arg	
210 215 220	
gtc ctg ttc ctg att ccc aag aac agc cca ccc aca ctg gag ggc cag	840
Val Leu Phe Leu Ile Pro Lys Asn Ser Pro Pro Thr Leu Glu Gly Gln	
225 230 235	
cac agc aag ccc ttc aag gag ttc gtg gag gcc tgc ctc aac aaa gac	888
His Ser Lys Pro Phe Lys Glu Phe Val Glu Ala Cys Leu Asn Lys Asp	
240 245 250	
ccc cga ttc cgg ccc acg gcc aag gag ctc ctg aag cac aag ttc atc	936
Pro Arg Phe Arg Pro Thr Ala Lys Glu Leu Leu Lys His Lys Phe Ile	
255 260 265 270	

aca cgc tac acc aag aag acc tcc ttc ctc acg gag ctc atc gac cgc	984
Thr Arg Tyr Thr Lys Lys Thr Ser Phe Leu Thr Glu Leu Ile Asp Arg	
275 280 285	
tat aag cgc tgg aag tca gag ggg cat ggc gag gag tcc agc tct gag	1032
Tyr Lys Arg Trp Lys Ser Glu Gly His Gly Glu Glu Ser Ser Ser Glu	
290 295 300	
gac tct gac att gat ggc gag gcg gag gac ggg gag cag ggc ccc atc	1080
Asp Ser Asp Ile Asp Gly Glu Ala Glu Asp Gly Glu Gln Gly Pro Ile	
305 310 315	
tgg acg ttc ccc cct acc atc cgg ccg agt cca cac agc aag ctt cac	1128
Trp Thr Phe Pro Pro Thr Ile Arg Pro Ser Pro His Ser Lys Leu His	
320 325 330	
aag ggg acg gcc ctg cac agt tca cag aag cct gcg gac gcc gtc aag	1176
Lys Gly Thr Ala Leu His Ser Ser Gln Lys Pro Ala Asp Ala Val Lys	
335 340 345 350	
agg cag ccg agg tcc cag tgc ctg tcc acg ctg gtc cgg ccc gtc ttc	1224
Arg Gln Pro Arg Ser Gln Cys Leu Ser Thr Leu Val Arg Pro Val Phe	
355 360 365	
gga gag ctc aaa gag aag cac aag cag agc ggc ggg agc gtg ggt gcg	1272
Gly Glu Leu Lys Glu Lys His Lys Gln Ser Gly Gly Ser Val Gly Ala	
370 375 380	
ctg gag gag ctg gag aac gcc ttc agc ctg gcc gag gag tcc tgc ccc	1320
Leu Glu Glu Leu Glu Asn Ala Phe Ser Leu Ala Glu Glu Ser Cys Pro	
385 390 395	
ggc atc tca gac aag ctg atg gtg cac ctg gtg gag cga gtg cag agg	1368
Gly Ile Ser Asp Lys Leu Met Val His Leu Val Glu Arg Val Gln Arg	
400 405 410	
ttt tca cac aac aga aac cac ctg aca tcc acc cgc tga agcgcactgc	1417
Phe Ser His Asn Arg Asn His Leu Thr Ser Thr Arg *	
415 420 425	
tggttcagata ggggacggaa ggtcgtttgt ttttgttctg agctccataa gaactgtgct	1477
gacttggaag gtgccctgtg ctatgtcgtg cctgcagggg cagctcggat cccgtgggcc	1537
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ctgtctcccc ggcccatgat ggccatagat ttgccttggt gtgttccatc aggtactgtg	1897
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<211> 426

<212> PRT

<213> Homo sapiens

<400> 42

Met Ala His Leu Arg Gly Phe Ala Asn Gln His Ser Arg Val Asp Pro

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5

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15

Glu Glu Leu Phe Thr Lys Leu Asp Arg Ile Gly Lys Gly Ser Phe Gly

20

25

30

Glu	Val	Tyr	Lys	Gly	Ile	Asp	Asn	His	Thr	Lys	Glu	Val	Val	Ala	Ile
		35					40					45			
Lys	Ile	Ile	Asp	Leu	Glu	Glu	Ala	Glu	Asp	Glu	Ile	Glu	Asp	Ile	Gln
	50					55					60				
Gln	Glu	Ile	Thr	Val	Leu	Ser	Gln	Cys	Asp	Ser	Pro	Tyr	Ile	Thr	Arg
65					70					75					80
Tyr	Phe	Gly	Ser	Tyr	Leu	Lys	Ser	Thr	Lys	Leu	Trp	Ile	Ile	Met	Glu
				85					90					95	
Tyr	Leu	Gly	Gly	Gly	Ser	Ala	Leu	Asp	Leu	Leu	Lys	Pro	Gly	Pro	Leu
			100					105					110		
Glu	Glu	Thr	Tyr	Ile	Ala	Thr	Ile	Leu	Arg	Glu	Ile	Leu	Lys	Gly	Leu
		115					120					125			
Asp	Tyr	Leu	His	Ser	Glu	Arg	Lys	Ile	His	Arg	Asp	Ile	Lys	Ala	Ala
	130					135					140				
Asn	Val	Leu	Leu	Ser	Glu	Gln	Gly	Asp	Val	Lys	Leu	Ala	Asp	Phe	Gly
145					150					155					160
Val	Ala	Gly	Gln	Leu	Thr	Asp	Thr	Gln	Ile	Lys	Arg	Asn	Thr	Phe	Val
			165						170						175
Gly	Thr	Pro	Phe	Trp	Met	Ala	Pro	Glu	Val	Ile	Lys	Gln	Ser	Ala	Tyr
			180					185					190		
Asp	Phe	Lys	Ala	Asp	Ile	Trp	Ser	Leu	Gly	Ile	Thr	Ala	Ile	Glu	Leu
	195						200					205			
Ala	Lys	Gly	Glu	Pro	Pro	Asn	Ser	Asp	Leu	His	Pro	Met	Arg	Val	Leu
	210					215					220				
Phe	Leu	Ile	Pro	Lys	Asn	Ser	Pro	Pro	Thr	Leu	Glu	Gly	Gln	His	Ser
225					230					235					240
Lys	Pro	Phe	Lys	Glu	Phe	Val	Glu	Ala	Cys	Leu	Asn	Lys	Asp	Pro	Arg
			245						250					255	
Phe	Arg	Pro	Thr	Ala	Lys	Glu	Leu	Leu	Lys	His	Lys	Phe	Ile	Thr	Arg
			260					265					270		
Tyr	Thr	Lys	Lys	Thr	Ser	Phe	Leu	Thr	Glu	Leu	Ile	Asp	Arg	Tyr	Lys
	275						280					285			
Arg	Trp	Lys	Ser	Glu	Gly	His	Gly	Glu	Glu	Ser	Ser	Ser	Glu	Asp	Ser
	290					295					300				
Asp	Ile	Asp	Gly	Glu	Ala	Glu	Asp	Gly	Glu	Gln	Gly	Pro	Ile	Trp	Thr
305					310					315					320
Phe	Pro	Pro	Thr	Ile	Arg	Pro	Ser	Pro	His	Ser	Lys	Leu	His	Lys	Gly
				325					330					335	
Thr	Ala	Leu	His	Ser	Ser	Gln	Lys	Pro	Ala	Asp	Ala	Val	Lys	Arg	Gln
			340					345					350		
Pro	Arg	Ser	Gln	Cys	Leu	Ser	Thr	Leu	Val	Arg	Pro	Val	Phe	Gly	Glu
			355				360					365			
Leu	Lys	Glu	Lys	His	Lys	Gln	Ser	Gly	Gly	Ser	Val	Gly	Ala	Leu	Glu
	370					375					380				
Glu	Leu	Glu	Asn	Ala	Phe	Ser	Leu	Ala	Glu	Glu	Ser	Cys	Pro	Gly	Ile
385					390					395					400
Ser	Asp	Lys	Leu	Met	Val	His	Leu	Val	Glu	Arg	Val	Gln	Arg	Phe	Ser
				405					410					415	
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Gln Asp Tyr His Gly His Lys Ile Cys Asp Pro Tyr Ala Trp Leu Glu	
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gac ccc gac agt gaa cag act aag gcc ttt gtg gag gcc cag aat aag	144
Asp Pro Asp Ser Glu Gln Thr Lys Ala Phe Val Glu Ala Gln Asn Lys	
35 40 45	
att act gtg cca ttt ctt gag cag tgt ccc atc aga ggt tta tac aaa	192
Ile Thr Val Pro Phe Leu Glu Gln Cys Pro Ile Arg Gly Leu Tyr Lys	
50 55 60	
gag aga atg act gaa cta tat gat tat ccc aag tat agt tgc cac ttc	240
Glu Arg Met Thr Glu Leu Tyr Asp Tyr Pro Lys Tyr Ser Cys His Phe	
65 70 75 80	
aag aaa gga aaa cgg tat ttt tat ttt tac aat aca ggt ttg cag aac	288
Lys Lys Gly Lys Arg Tyr Phe Tyr Phe Tyr Asn Thr Gly Leu Gln Asn	
85 90 95	
cag cga gta tta tat gta cag gat tcc tta gag ggg gag gcc aga gtg	336
Gln Arg Val Leu Tyr Val Gln Asp Ser Leu Glu Gly Glu Ala Arg Val	
100 105 110	
ttc ctg gac ccc aac ata ctg tct gac gat ggc aca gtg gca ctc cga	384
Phe Leu Asp Pro Asn Ile Leu Ser Asp Asp Gly Thr Val Ala Leu Arg	
115 120 125	
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Gly Tyr Ala Phe Ser Glu Asp Gly Glu Tyr Phe Ala Tyr Gly Leu Ser	
130 135 140	
gcc agt ggc tca gac tgg gtg aca atc aag ttc atg aaa gtt gat ggt	480
Ala Ser Gly Ser Asp Trp Val Thr Ile Lys Phe Met Lys Val Asp Gly	
145 150 155 160	
gcc aaa gag ctt cca gat gtg ctt gaa aga gtc aag ttc agc tgt atg	528
Ala Lys Glu Leu Pro Asp Val Leu Glu Arg Val Lys Phe Ser Cys Met	
165 170 175	
gcc tgg acc cat gat ggg aag gga atg ttc tac aac tca tac cct caa	576
Ala Trp Thr His Asp Gly Lys Gly Met Phe Tyr Asn Ser Tyr Pro Gln	
180 185 190	
cag gat gga aaa agt gat ggc aca gag aca tct acc aat ctc cac caa	624
Gln Asp Gly Lys Ser Asp Gly Thr Thr Ser Thr Asn Leu His Gln	
195 200 205	
aag ctc tac tac cat gtc ttg gga acc gat cag tca gaa gat att ttg	672
Lys Leu Tyr Tyr His Val Leu Gly Thr Asp Gln Ser Glu Asp Ile Leu	
210 215 220	
tgt gct gag ttt cct gat gaa cct aaa tgg atg ggt gga gct gag tta	720
Cys Ala Glu Phe Pro Asp Glu Pro Lys Trp Met Gly Gly Ala Glu Leu	
225 230 235 240	



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Ser Asp Asp Gly Arg Tyr Val Leu Leu Ser Ile Arg Glu Gly Cys Asp	
245 250 255	
cca gta aac cga ctc tgg tac tgt gac cta cag cag gaa tcc agt ggc	816
Pro Val Asn Arg Leu Trp Tyr Cys Asp Leu Gln Gln Glu Ser Ser Gly	
260 265 270	
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Ile Ala Gly Ile Leu Lys Trp Val Lys Leu Ile Asp Asn Phe Glu Gly	
275 280 285	
gaa tat gac tac gtg acc aat gag ggg acg gtg ttc aca ttc aag acg	912
Glu Tyr Asp Tyr Val Thr Asn Glu Gly Thr Val Phe Thr Phe Lys Thr	
290 295 300	
aat cgc cag tct ccc aac tat cgc gtg atc aac att gac ttc tgg gat	960
Asn Arg Gln Ser Pro Asn Tyr Arg Val Ile Asn Ile Asp Phe Trp Asp	
305 310 315 320	
cct gaa gag tct aag tgg aaa gta ctt gtt cct gag cat gag aaa gat	1008
Pro Glu Glu Ser Lys Trp Lys Val Leu Val Pro Glu His Glu Lys Asp	
325 330 335	
gtc tta gaa tgg ata gct tgt gtc agg tcc aac ttc ttg gtc tta tgc	1056
Val Leu Glu Trp Ile Ala Cys Val Arg Ser Asn Phe Leu Val Leu Cys	
340 345 350	
tac ctc cat gac gtc aag aac att ctg cag ctc cat gac ctg act act	1104
Tyr Leu His Asp Val Lys Asn Ile Leu Gln Leu His Asp Leu Thr Thr	
355 360 365	
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Gly Ala Leu Leu Lys Thr Phe Pro Leu Asp Val Gly Ser Ile Val Gly	
370 375 380	
tac agc ggt cag aag aag gac act gaa atc ttc tat cag ttt act tcc	1200
Tyr Ser Gly Gln Lys Lys Asp Thr Glu Ile Phe Tyr Gln Phe Thr Ser	
385 390 395 400	
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Phe Leu Ser Pro Gly Ile Ile Tyr His Cys Asp Leu Thr Lys Glu Glu	
405 410 415	
ctg gag cca aga gtt ttc cga gag gtg acc gta aaa gga att gat gct	1296
Leu Glu Pro Arg Val Phe Arg Glu Val Thr Val Lys Gly Ile Asp Ala	
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Ser Asp Tyr Gln Thr Val Gln Ile Phe Tyr Pro Ser Lys Asp Gly Thr	
435 440 445	
aag att cca atg ttc att gtg cat aaa aaa ggc ata aaa ttg gat ggc	1392
Lys Ile Pro Met Phe Ile Val His Lys Lys Gly Ile Lys Leu Asp Gly	
450 455 460	
tct cat cca gct ttc tta tat ggc tat ggc ggc ttc aac ata tcc atc	1440
Ser His Pro Ala Phe Leu Tyr Gly Tyr Gly Gly Phe Asn Ile Ser Ile	
465 470 475 480	
aca ccc aac tac agt gtt tcc agg ctt att ttt gtg aga cac atg ggt	1488

Thr	Pro	Asn	Tyr	Ser	Val	Ser	Arg	Leu	Ile	Phe	Val	Arg	His	Met	Gly		
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ggt	atc	ctg	gca	gtg	gcc	aac	atc	aga	gga	ggt	ggc	gaa	tat	gga	gag	1536	
Gly	Ile	Leu	Ala	Val	Ala	Asn	Ile	Arg	Gly	Gly	Gly	Glu	Tyr	Gly	Glu		
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Thr	Trp	His	Lys	Gly	Gly	Ile	Leu	Ala	Asn	Lys	Gln	Asn	Cys	Phe	Asp		
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gac	ttt	cag	tgt	gct	gct	gag	tat	ctg	atc	aag	gaa	ggt	tac	aca	tct	1632	
Asp	Phe	Gln	Cys	Ala	Ala	Glu	Tyr	Leu	Ile	Lys	Glu	Gly	Tyr	Thr	Ser		
	530					535					540						
ccc	aag	agg	ctg	act	att	aat	gga	ggt	tca	aat	gga	ggc	ctc	tta	gtg	1680	
Pro	Lys	Arg	Leu	Thr	Ile	Asn	Gly	Gly	Ser	Asn	Gly	Gly	Leu	Leu	Val		
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gct	gct	tgt	gca	aat	cag	aga	cct	gac	ctc	ttt	ggt	tgt	ggt	att	gcc	1728	
Ala	Ala	Cys	Ala	Asn	Gln	Arg	Pro	Asp	Leu	Phe	Gly	Cys	Val	Ile	Ala		
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caa	ggt	gga	gta	atg	gac	atg	ctg	aag	ttt	cat	aaa	tat	acc	atc	ggc	1776	
Gln	Val	Gly	Val	Met	Asp	Met	Leu	Lys	Phe	His	Lys	Tyr	Thr	Ile	Gly		
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cat	gct	tgg	acc	act	gat	tat	ggg	tgc	tcg	gac	agc	aaa	caa	cac	ttt	1824	
His	Ala	Trp	Thr	Thr	Asp	Tyr	Gly	Cys	Ser	Asp	Ser	Lys	Gln	His	Phe		
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Glu	Trp	Leu	Val	Lys	Tyr	Ser	Pro	Leu	His	Asn	Val	Lys	Leu	Pro	Glu		
	610						615					620					
gca	gat	gac	atc	cag	tac	ccg	tcc	atg	ctg	ctc	ctc	act	gct	gac	cat	1920	
Ala	Asp	Asp	Ile	Gln	Tyr	Pro	Ser	Met	Leu	Leu	Leu	Thr	Ala	Asp	His		
	625				630					635					640		
gat	gac	cgc	gtg	gtc	ccg	ctt	cac	tcc	ctg	aag	ttc	att	gcc	acc	ctt	1968	
Asp	Asp	Arg	Val	Val	Pro	Leu	His	Ser	Leu	Lys	Phe	Ile	Ala	Thr	Leu		
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cag	tac	atc	gtg	ggc	cgc	agc	agg	aag	caa	agc	aac	ccc	ctg	ctt	atc	2016	
Gln	Tyr	Ile	Val	Gly	Arg	Ser	Arg	Lys	Gln	Ser	Asn	Pro	Leu	Leu	Ile		
			660					665					670				
cac	gtg	gac	acc	aag	gcg	ggc	cac	ggg	gcg	ggg	aag	ccc	aca	gcc	aaa	2064	
His	Val	Asp	Thr	Lys	Ala	Gly	His	Gly	Ala	Gly	Lys	Pro	Thr	Ala	Lys		
		675					680					685					
gtg	ata	gag	gaa	gtc	tca	gac	atg	ttt	gcg	ttc	atc	gcg	cgg	tgc	ctg	2112	
Val	Ile	Glu	Glu	Val	Ser	Asp	Met	Phe	Ala	Phe	Ile	Ala	Arg	Cys	Leu		
	690					695					700						
aat	gtc	gac	tgg	att	cca	taa	acagtttttcg	tgcttctctcc	tgacagcgac							2163	
Asn	Val	Asp	Trp	Ile	Pro	*											
	705				710												
agaaaacctc	aagggctttc	ccacgttgac	accaagaaac	cactgggcat	aatgcttccc	2223											
cacgggaaca	ttattcctgc	actcacaggc	tacagttgaa	cagaactgcc	gtgggaattt	2283											

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<211> 710

<212> PRT

<213> Homo sapiens

<400> 44

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Asp	Pro	Asp	Ser	Glu	Gln	Thr	Lys	Ala	Phe	Val	Glu	Ala	Gln	Asn	Lys
			35				40					45			
Ile	Thr	Val	Pro	Phe	Leu	Glu	Gln	Cys	Pro	Ile	Arg	Gly	Leu	Tyr	Lys
	50					55					60				
Glu	Arg	Met	Thr	Glu	Leu	Tyr	Asp	Tyr	Pro	Lys	Tyr	Ser	Cys	His	Phe
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Lys	Lys	Gly	Lys	Arg	Tyr	Phe	Tyr	Phe	Tyr	Asn	Thr	Gly	Leu	Gln	Asn
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Gln	Arg	Val	Leu	Tyr	Val	Gln	Asp	Ser	Leu	Glu	Gly	Glu	Ala	Arg	Val
			100					105					110		
Phe	Leu	Asp	Pro	Asn	Ile	Leu	Ser	Asp	Asp	Gly	Thr	Val	Ala	Leu	Arg
		115					120					125			
Gly	Tyr	Ala	Phe	Ser	Glu	Asp	Gly	Glu	Tyr	Phe	Ala	Tyr	Gly	Leu	Ser
		130				135					140				
Ala	Ser	Gly	Ser	Asp	Trp	Val	Thr	Ile	Lys	Phe	Met	Lys	Val	Asp	Gly
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Ala	Lys	Glu	Leu	Pro	Asp	Val	Leu	Glu	Arg	Val	Lys	Phe	Ser	Cys	Met
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Ala	Trp	Thr	His	Asp	Gly	Lys	Gly	Met	Phe	Tyr	Asn	Ser	Tyr	Pro	Gln
			180					185					190		
Gln	Asp	Gly	Lys	Ser	Asp	Gly	Thr	Glu	Thr	Ser	Thr	Asn	Leu	His	Gln
		195					200					205			
Lys	Leu	Tyr	Tyr	His	Val	Leu	Gly	Thr	Asp	Gln	Ser	Glu	Asp	Ile	Leu
	210					215						220			
Cys	Ala	Glu	Phe	Pro	Asp	Glu	Pro	Lys	Trp	Met	Gly	Gly	Ala	Glu	Leu
225					230					235					240
Ser	Asp	Asp	Gly	Arg	Tyr	Val	Leu	Leu	Ser	Ile	Arg	Glu	Gly	Cys	Asp
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Pro	Val	Asn	Arg	Leu	Trp	Tyr	Cys	Asp	Leu	Gln	Gln	Glu	Ser	Ser	Gly
			260					265					270		
Ile	Ala	Gly	Ile	Leu	Lys	Trp	Val	Lys	Leu	Ile	Asp	Asn	Phe	Glu	Gly
		275					280					285			
Glu	Tyr	Asp	Tyr	Val	Thr	Asn	Glu	Gly	Thr	Val	Phe	Thr	Phe	Lys	Thr
	290					295					300				
Asn	Arg	Gln	Ser	Pro	Asn	Tyr	Arg	Val	Ile	Asn	Ile	Asp	Phe	Trp	Asp
305					310					315					320
Pro	Glu	Glu	Ser	Lys	Trp	Lys	Val	Leu	Val	Pro	Glu	His	Glu	Lys	Asp
				325					330					335	
Val	Leu	Glu	Trp	Ile	Ala	Cys	Val	Arg	Ser	Asn	Phe	Leu	Val	Leu	Cys
			340					345					350		
Tyr	Leu	His	Asp	Val	Lys	Asn	Ile	Leu	Gln	Leu	His	Asp	Leu	Thr	Thr
		355					360					365			
Gly	Ala	Leu	Leu	Lys	Thr	Phe	Pro	Leu	Asp	Val	Gly	Ser	Ile	Val	Gly
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Tyr	Ser	Gly	Gln	Lys	Lys	Asp	Thr	Glu	Ile	Phe	Tyr	Gln	Phe	Thr	Ser

385					390					395				400
Phe	Leu	Ser	Pro	Gly	Ile	Ile	Tyr	His	Cys	Asp	Leu	Thr	Lys	Glu
				405					410					415
Leu	Glu	Pro	Arg	Val	Phe	Arg	Glu	Val	Thr	Val	Lys	Gly	Ile	Asp
			420					425						430
Ser	Asp	Tyr	Gln	Thr	Val	Gln	Ile	Phe	Tyr	Pro	Ser	Lys	Asp	Gly
		435					440					445		Thr
Lys	Ile	Pro	Met	Phe	Ile	Val	His	Lys	Lys	Gly	Ile	Lys	Leu	Asp
	450					455					460			Gly
Ser	His	Pro	Ala	Phe	Leu	Tyr	Gly	Tyr	Gly	Gly	Phe	Asn	Ile	Ser
465					470				475					480
Thr	Pro	Asn	Tyr	Ser	Val	Ser	Arg	Leu	Ile	Phe	Val	Arg	His	Met
				485					490					495
Gly	Ile	Leu	Ala	Val	Ala	Asn	Ile	Arg	Gly	Gly	Gly	Glu	Tyr	Gly
			500					505					510	Glu
Thr	Trp	His	Lys	Gly	Gly	Ile	Leu	Ala	Asn	Lys	Gln	Asn	Cys	Phe
	515						520					525		Asp
Asp	Phe	Gln	Cys	Ala	Ala	Glu	Tyr	Leu	Ile	Lys	Glu	Gly	Tyr	Thr
	530					535					540			Ser
Pro	Lys	Arg	Leu	Thr	Ile	Asn	Gly	Gly	Ser	Asn	Gly	Gly	Leu	Leu
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Ala	Ala	Cys	Ala	Asn	Gln	Arg	Pro	Asp	Leu	Phe	Gly	Cys	Val	Ile
			565					570						575
Gln	Val	Gly	Val	Met	Asp	Met	Leu	Lys	Phe	His	Lys	Tyr	Thr	Ile
		580						585					590	Gly
His	Ala	Trp	Thr	Thr	Asp	Tyr	Gly	Cys	Ser	Asp	Ser	Lys	Gln	His
		595					600					605		Phe
Glu	Trp	Leu	Val	Lys	Tyr	Ser	Pro	Leu	His	Asn	Val	Lys	Leu	Pro
	610					615					620			Glu
Ala	Asp	Asp	Ile	Gln	Tyr	Pro	Ser	Met	Leu	Leu	Leu	Thr	Ala	Asp
625					630				635					640
Asp	Asp	Arg	Val	Val	Pro	Leu	His	Ser	Leu	Lys	Phe	Ile	Ala	Thr
			645						650					655
Gln	Tyr	Ile	Val	Gly	Arg	Ser	Arg	Lys	Gln	Ser	Asn	Pro	Leu	Leu
		660					665						670	Ile
His	Val	Asp	Thr	Lys	Ala	Gly	His	Gly	Ala	Gly	Lys	Pro	Thr	Ala
	675					680						685		Lys
Val	Ile	Glu	Glu	Val	Ser	Asp	Met	Phe	Ala	Phe	Ile	Ala	Arg	Cys
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 Leu Gly Asp Thr Leu Arg Arg Leu Arg Glu Ala Phe His Ala Gly Arg  
 5 10 15

acg cgg cca gct gag ttc cgg gct gcg cag ctc caa ggc ctg ggc cgc	152
Thr Arg Pro Ala Glu Phe Arg Ala Ala Gln Leu Gln Gly Leu Gly Arg	
20 25 30 35	
ttc ctg caa gaa aac aag cag ctt ctg cac gac gca ctg gcc cag gac	200
Phe Leu Gln Glu Asn Lys Gln Leu Leu His Asp Ala Leu Ala Gln Asp	
40 45 50	
ctg cac aag tca gcc ttc gag tcg gag gtg tct gag gtt gcc atc agc	248
Leu His Lys Ser Ala Phe Glu Ser Glu Val Ser Glu Val Ala Ile Ser	
55 60 65	
cag ggc gag gtc acc ctg gcc ctc agg aac ctc cgg gcc tgg atg aag	296
Gln Gly Glu Val Thr Leu Ala Leu Arg Asn Leu Arg Ala Trp Met Lys	
70 75 80	
gac gag cgt gtg ccc aag aac ctg gcc acg cag ctg gac tcc gcc ttc	344
Asp Glu Arg Val Pro Lys Asn Leu Ala Thr Gln Leu Asp Ser Ala Phe	
85 90 95	
atc cgg aag gag ccc ttt ggc ctg gtc ctc atc att gcg ccc tgg aac	392
Ile Arg Lys Glu Pro Phe Gly Leu Val Leu Ile Ile Ala Pro Trp Asn	
100 105 110 115	
tat ccg ctg aac ctg acg ctg gtg ccc ctc gtg gga gcc ctc gct gca	440
Tyr Pro Leu Asn Leu Thr Leu Val Pro Leu Val Gly Ala Leu Ala Ala	
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Gly Asn Cys Val Val Leu Lys Pro Ser Glu Ile Ser Lys Asn Val Glu	
135 140 145	
aag atc ctg gcc gag gtg ctg ccc caa tac gtg gac cag agc tgc ttt	536
Lys Ile Leu Ala Glu Val Leu Pro Gln Tyr Val Asp Gln Ser Cys Phe	
150 155 160	
gct gtg gtg ctg gcc ggc ccc cag gag acg ggc cag ctg cta gag cac	584
Ala Val Val Leu Gly Gly Pro Gln Glu Thr Gly Gln Leu Leu Glu His	
165 170 175	
agg ttc gac tac atc ttc ttc aca ggc agc cct cgt gtg ggc aag att	632
Arg Phe Asp Tyr Ile Phe Phe Thr Gly Ser Pro Arg Val Gly Lys Ile	
180 185 190 195	
gtt atg act gct gcc gcc aag cac ctg aca cct gtc acc ctg gag ctg	680
Val Met Thr Ala Ala Ala Lys His Leu Thr Pro Val Thr Leu Glu Leu	
200 205 210	
ggg ggc aag aac cct tgc tac gtg gac gac aac tgc gac ccc cag acc	728
Gly Gly Lys Asn Pro Cys Tyr Val Asp Asp Asn Cys Asp Pro Gln Thr	
215 220 225	
gtg gcc aac cgc gtg gcc tgg ttc cgc tac ttc aac gcc ggc cag acc	776
Val Ala Asn Arg Val Ala Trp Phe Arg Tyr Phe Asn Ala Gly Gln Thr	
230 235 240	
tgc gtg gcc ccc gac tac gtc cta tgc agc cct gag atg cag gag agg	824
Cys Val Ala Pro Asp Tyr Val Leu Cys Ser Pro Glu Met Gln Glu Arg	
245 250 255	
ctg ctg cct gcc ctg cag agc acc atc acc cgt ttc tat ggc gac gac	872

Leu	Leu	Pro	Ala	Leu	Gln	Ser	Thr	Ile	Thr	Arg	Phe	Tyr	Gly	Asp	Asp		
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Pro	Gln	Ser	Ser	Pro	Asn	Leu	Gly	Arg	Ile	Ile	Asn	Gln	Lys	Gln	Phe		
				280					285					290			
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Gln	Arg	Leu	Arg	Ala	Leu	Leu	Gly	Cys	Gly	Arg	Val	Ala	Ile	Gly	Gly		
			295					300					305				
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Gln	Ser	Asp	Glu	Ser	Asp	Arg	Tyr	Ile	Ala	Pro	Thr	Val	Leu	Val	Asp		
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Val	Gln	Glu	Met	Glu	Pro	Val	Met	Gln	Glu	Glu	Ile	Phe	Gly	Pro	Ile		
	325					330					335						
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Leu	Pro	Ile	Val	Asn	Val	Gln	Ser	Leu	Asp	Glu	Ala	Ile	Glu	Phe	Ile		
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aac	cgg	cgg	gag	aag	ccc	ctg	gcc	ctg	tac	gcc	ttc	tcc	aac	agc	agc	1160	
Asn	Arg	Arg	Glu	Lys	Pro	Leu	Ala	Leu	Tyr	Ala	Phe	Ser	Asn	Ser	Ser		
				360					365					370			
cag	gtg	gtc	aag	cgg	gtg	ctg	acc	cag	acc	agc	agc	ggg	ggc	ttc	tgt	1208	
Gln	Val	Val	Lys	Arg	Val	Leu	Thr	Gln	Thr	Ser	Ser	Gly	Gly	Phe	Cys		
			375					380					385				
ggg	aac	gac	ggc	ttc	atg	cac	atg	acc	ctg	gcc	agc	ctg	cct	ttt	gga	1256	
Gly	Asn	Asp	Gly	Phe	Met	His	Met	Thr	Leu	Ala	Ser	Leu	Pro	Phe	Gly		
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Asp	Thr	Phe	Ser	His	His	Arg	Ala	Cys	Leu	Leu	Arg	Ser	Pro	Gly	Met		
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Glu	Lys	Leu	Asn	Ala	Leu	Arg	Tyr	Pro	Pro	Gln	Ser	Pro	Arg	Arg	Leu		
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agg	atg	ctg	ctg	gtg	gcc	atg	gag	gcc	caa	ggc	tgc	agc	tgc	aca	ctg	1448	
Arg	Met	Leu	Leu	Val	Ala	Met	Glu	Ala	Gln	Gly	Cys	Ser	Cys	Thr	Leu		
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Leu	*																
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gcagtga	ctc	acccctgcc	cccgccacaa	ccaccatat	tcaggagaag	aggacagaca										1744	
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<210> 46

<211> 468

<212> PRT

<213> Homo sapiens

<400> 46

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Leu Gly Arg Phe Leu Gln Glu Asn Lys Gln Leu Leu His Asp Ala Leu
 35          40          45
Ala Gln Asp Leu His Lys Ser Ala Phe Glu Ser Glu Val Ser Glu Val
 50          55          60
Ala Ile Ser Gln Gly Glu Val Thr Leu Ala Leu Arg Asn Leu Arg Ala
 65          70          75          80
Trp Met Lys Asp Glu Arg Val Pro Lys Asn Leu Ala Thr Gln Leu Asp
 85          90          95
Ser Ala Phe Ile Arg Lys Glu Pro Phe Gly Leu Val Leu Ile Ile Ala
 100         105         110
Pro Trp Asn Tyr Pro Leu Asn Leu Thr Leu Val Pro Leu Val Gly Ala
 115         120         125
Leu Ala Ala Gly Asn Cys Val Val Leu Lys Pro Ser Glu Ile Ser Lys
 130         135         140
Asn Val Glu Lys Ile Leu Ala Glu Val Leu Pro Gln Tyr Val Asp Gln
 145         150         155         160
Ser Cys Phe Ala Val Val Leu Gly Gly Pro Gln Glu Thr Gly Gln Leu
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Leu Glu His Arg Phe Asp Tyr Ile Phe Phe Thr Gly Ser Pro Arg Val
 180         185         190
Gly Lys Ile Val Met Thr Ala Ala Ala Lys His Leu Thr Pro Val Thr
 195         200         205
Leu Glu Leu Gly Gly Lys Asn Pro Cys Tyr Val Asp Asn Cys Asp
 210         215         220
Pro Gln Thr Val Ala Asn Arg Val Ala Trp Phe Arg Tyr Phe Asn Ala
 225         230         235         240
Gly Gln Thr Cys Val Ala Pro Asp Tyr Val Leu Cys Ser Pro Glu Met
 245         250         255
Gln Glu Arg Leu Leu Pro Ala Leu Gln Ser Thr Ile Thr Arg Phe Tyr
 260         265         270
Gly Asp Asp Pro Gln Ser Ser Pro Asn Leu Gly Arg Ile Ile Asn Gln
 275         280         285
Lys Gln Phe Gln Arg Leu Arg Ala Leu Leu Gly Cys Gly Arg Val Ala
 290         295         300

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Ile Gly Gly Gln Ser Asp Glu Ser Asp Arg Tyr Ile Ala Pro Thr Val  
 305 310 315 320  
 Leu Val Asp Val Gln Glu Met Glu Pro Val Met Gln Glu Glu Ile Phe  
 325 330 335  
 Gly Pro Ile Leu Pro Ile Val Asn Val Gln Ser Leu Asp Glu Ala Ile  
 340 345 350  
 Glu Phe Ile Asn Arg Arg Glu Lys Pro Leu Ala Leu Tyr Ala Phe Ser  
 355 360 365  
 Asn Ser Ser Gln Val Val Lys Arg Val Leu Thr Gln Thr Ser Ser Gly  
 370 375 380  
 Gly Phe Cys Gly Asn Asp Gly Phe Met His Met Thr Leu Ala Ser Leu  
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 Pro Phe Gly Gly Val Gly Ala Ser Gly Met Gly Arg Tyr His Gly Lys  
 405 410 415  
 Phe Ser Phe Asp Thr Phe Ser His His Arg Ala Cys Leu Leu Arg Ser  
 420 425 430  
 Pro Gly Met Glu Lys Leu Asn Ala Leu Arg Tyr Pro Pro Gln Ser Pro  
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 Cys Thr Leu Leu  
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 Pro Arg Ala Ala Leu Leu Pro Leu Leu Leu Leu Leu Leu Ala Ala Pro  
 5 10 15  
 gcc tcg gcg cag ctg tcc cgg gcc ggc cgc tcg gcg cct ttg gcc gcc 153  
 Ala Ser Ala Gln Leu Ser Arg Ala Gly Arg Ser Ala Pro Leu Ala Ala  
 20 25 30 35  
 ggg tgc cca gac cgc tgc gag ccg gcg cgc tgc ccg ccg cag ccg gag 201  
 Gly Cys Pro Asp Arg Cys Glu Pro Ala Arg Cys Pro Pro Gln Pro Glu  
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 His Cys Glu Gly Gly Arg Ala Arg Asp Ala Cys Gly Cys Cys Glu Val  
 55 60 65  
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 Cys Gly Ala Pro Glu Gly Ala Ala Cys Gly Leu Gln Glu Gly Pro Cys  
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 Gly Glu Gly Leu Gln Cys Val Val Pro Phe Gly Val Pro Ala Ser Ala  
 85 90 95



acg	gtg	cgg	cgg	cgc	gcg	cag	gcc	ggc	ctc	tgt	gtg	tgc	gcc	agc	agc	393
Thr	Val	Arg	Arg	Arg	Ala	Gln	Ala	Gly	Leu	Cys	Val	Cys	Ala	Ser	Ser	
100					105					110					115	
gag	ccg	gtg	tgc	ggc	agc	gac	gcc	aac	acc	tac	gcc	aac	ctg	tgc	cag	441
Glu	Pro	Val	Cys	Gly	Ser	Asp	Ala	Asn	Thr	Tyr	Ala	Asn	Leu	Cys	Gln	
				120					125					130		
ctg	cgc	gcc	gcc	agc	cgc	cgc	tcc	gag	agg	ctg	cac	cgg	ccg	ccg	gtc	489
Leu	Arg	Ala	Ala	Ser	Arg	Arg	Ser	Glu	Arg	Leu	His	Arg	Pro	Pro	Val	
			135					140					145			
atc	gtc	ctg	cag	cgc	gga	gcc	tgc	ggc	caa	ggg	cag	gaa	gat	ccc	aac	537
Ile	Val	Leu	Gln	Arg	Gly	Ala	Cys	Gly	Gln	Gly	Gln	Glu	Asp	Pro	Asn	
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Ser	Leu	Arg	His	Lys	Tyr	Asn	Phe	Ile	Ala	Asp	Val	Val	Glu	Lys	Ile	
	165					170					175					
gcc	cct	gcc	gtg	gtt	cat	atc	gaa	ttg	ttt	cgc	aag	ctt	ccg	ttt	tct	633
Ala	Pro	Ala	Val	Val	His	Ile	Glu	Leu	Phe	Arg	Lys	Leu	Pro	Phe	Ser	
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Lys	Arg	Glu	Val	Pro	Val	Ala	Ser	Gly	Ser	Gly	Phe	Ile	Val	Ser	Glu	
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gat	gga	ctg	atc	gtg	aca	aat	gcc	cac	gtg	gtg	acc	aac	aag	cac	cgg	729
Asp	Gly	Leu	Ile	Val	Thr	Asn	Ala	His	Val	Val	Thr	Asn	Lys	His	Arg	
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gtc	aaa	gtt	gag	ctg	aag	aac	ggt	gcc	act	tac	gaa	gcc	aaa	atc	aag	777
Val	Lys	Val	Glu	Leu	Lys	Asn	Gly	Ala	Thr	Tyr	Glu	Ala	Lys	Ile	Lys	
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gat	gtg	gat	gag	aaa	gca	gac	atc	gca	ctc	atc	aaa	att	gac	cac	cag	825
Asp	Val	Asp	Glu	Lys	Ala	Asp	Ile	Ala	Leu	Ile	Lys	Ile	Asp	His	Gln	
	245					250					255					
ggc	aag	ctg	cct	gtc	ctg	ctg	ctt	ggc	cgc	tcc	tca	gag	ctg	cgg	ccg	873
Gly	Lys	Leu	Pro	Val	Leu	Leu	Leu	Gly	Arg	Ser	Ser	Glu	Leu	Arg	Pro	
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gga	gag	ttc	gtg	gtc	gcc	atc	gga	agc	ccg	ttt	tcc	ctt	caa	aac	aca	921
Gly	Glu	Phe	Val	Val	Ala	Ile	Gly	Ser	Pro	Phe	Ser	Leu	Gln	Asn	Thr	
				280					285					290		
gtc	acc	acc	ggg	atc	gtg	agc	acc	acc	cag	cga	ggc	ggc	aaa	gag	ctg	969
Val	Thr	Thr	Gly	Ile	Val	Ser	Thr	Thr	Gln	Arg	Gly	Gly	Lys	Glu	Leu	
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Gly	Leu	Arg	Asn	Ser	Asp	Met	Asp	Tyr	Ile	Gln	Thr	Asp	Ala	Ile	Ile	
		310					315					320				
aac	tat	gga	aac	tcg	gga	ggc	ccg	tta	gta	aac	ctg	gac	ggg	gaa	gtg	1065
Asn	Tyr	Gly	Asn	Ser	Gly	Gly	Pro	Leu	Val	Asn	Leu	Asp	Gly	Glu	Val	
	325					330					335					

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 Ile Gly Ile Asn Thr Leu Lys Val Thr Ala Gly Ile Ser Phe Ala Ile  
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 cca tct gat aag att aaa aag ttc ctc acg gag tcc cat gac cga cag 1161  
 Pro Ser Asp Lys Ile Lys Lys Phe Leu Thr Glu Ser His Asp Arg Gln  
 360 365 370  
  
 gcc aaa gga aaa gcc atc acc aag aag aag tat att ggt atc cga atg 1209  
 Ala Lys Gly Lys Ala Ile Thr Lys Lys Lys Tyr Ile Gly Ile Arg Met  
 375 380 385  
  
 atg tca ctc acg tcc agc aaa gcc aaa gag ctg aag gac cgg cac cgg 1257  
 Met Ser Leu Thr Ser Ser Lys Ala Lys Glu Leu Lys Asp Arg His Arg  
 390 395 400  
  
 gac ttc cca gac gtg atc tca gga gcg tat ata att gaa gta att cct 1305  
 Asp Phe Pro Asp Val Ile Ser Gly Ala Tyr Ile Ile Glu Val Ile Pro  
 405 410 415  
  
 gat acc cca gca gaa gct ggt ggt ctc aag gaa aac gac gtc ata atc 1353  
 Asp Thr Pro Ala Glu Ala Gly Gly Leu Lys Glu Asn Asp Val Ile Ile  
 420 425 430 435  
  
 agc atc aat gga cag tcc gtg gtc tcc gcc aat gat gtc agc gac gtc 1401  
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 440 445 450  
  
 att aaa agg gaa agc acc ctg aac atg gtg gtc cgc agg ggt aat gaa 1449  
 Ile Lys Arg Glu Ser Thr Leu Asn Met Val Val Arg Arg Gly Asn Glu  
 455 460 465  
  
 gat atc atg atc aca gtg att ccc gaa gaa att gac cca tag 1491  
 Asp Ile Met Ile Thr Val Ile Pro Glu Glu Ile Asp Pro \*  
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 gcagaggcat gagctggact tcatgtttcc ctcaaagact ctcccgtgga tgacggatga 1551  
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 acaaaa 2036

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 <212> PRT  
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 Leu Ala Ala Gly Cys Pro Asp Arg Cys Glu Pro Ala Arg Cys Pro Pro  
 35 40 45  
 Gln Pro Glu His Cys Glu Gly Gly Arg Ala Arg Asp Ala Cys Gly Cys  
 50 55 60

Cys	Glu	Val	Cys	Gly	Ala	Pro	Glu	Gly	Ala	Ala	Cys	Gly	Leu	Gln	Glu
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Gly	Pro	Cys	Gly	Glu	Gly	Leu	Gln	Cys	Val	Val	Pro	Phe	Gly	Val	Pro
				85					90					95	
Ala	Ser	Ala	Thr	Val	Arg	Arg	Arg	Ala	Gln	Ala	Gly	Leu	Cys	Val	Cys
				100				105					110		
Ala	Ser	Ser	Glu	Pro	Val	Cys	Gly	Ser	Asp	Ala	Asn	Thr	Tyr	Ala	Asn
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Leu	Cys	Gln	Leu	Arg	Ala	Ala	Ser	Arg	Arg	Ser	Glu	Arg	Leu	His	Arg
	130					135					140				
Pro	Pro	Val	Ile	Val	Leu	Gln	Arg	Gly	Ala	Cys	Gly	Gln	Gly	Gln	Glu
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Asp	Pro	Asn	Ser	Leu	Arg	His	Lys	Tyr	Asn	Phe	Ile	Ala	Asp	Val	Val
				165					170					175	
Glu	Lys	Ile	Ala	Pro	Ala	Val	Val	His	Ile	Glu	Leu	Phe	Arg	Lys	Leu
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Pro	Phe	Ser	Lys	Arg	Glu	Val	Pro	Val	Ala	Ser	Gly	Ser	Gly	Phe	Ile
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Val	Ser	Glu	Asp	Gly	Leu	Ile	Val	Thr	Asn	Ala	His	Val	Val	Thr	Asn
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225					230					235					240
Lys	Ile	Lys	Asp	Val	Asp	Glu	Lys	Ala	Asp	Ile	Ala	Leu	Ile	Lys	Ile
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Asp	His	Gln	Gly	Lys	Leu	Pro	Val	Leu	Leu	Leu	Gly	Arg	Ser	Ser	Glu
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Leu	Arg	Pro	Gly	Glu	Phe	Val	Val	Ala	Ile	Gly	Ser	Pro	Phe	Ser	Leu
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Gln	Asn	Thr	Val	Thr	Thr	Gly	Ile	Val	Ser	Thr	Thr	Gln	Arg	Gly	Gly
			290			295						300			
Lys	Glu	Leu	Gly	Leu	Arg	Asn	Ser	Asp	Met	Asp	Tyr	Ile	Gln	Thr	Asp
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Ala	Ile	Ile	Asn	Tyr	Gly	Asn	Ser	Gly	Gly	Pro	Leu	Val	Asn	Leu	Asp
				325					330					335	
Gly	Glu	Val	Ile	Gly	Ile	Asn	Thr	Leu	Lys	Val	Thr	Ala	Gly	Ile	Ser
			340					345					350		
Phe	Ala	Ile	Pro	Ser	Asp	Lys	Ile	Lys	Lys	Phe	Leu	Thr	Glu	Ser	His
			355				360					365			
Asp	Arg	Gln	Ala	Lys	Gly	Lys	Ala	Ile	Thr	Lys	Lys	Lys	Tyr	Ile	Gly
			370			375					380				
Ile	Arg	Met	Met	Ser	Leu	Thr	Ser	Ser	Lys	Ala	Lys	Glu	Leu	Lys	Asp
385					390					395					400
Arg	His	Arg	Asp	Phe	Pro	Asp	Val	Ile	Ser	Gly	Ala	Tyr	Ile	Ile	Glu
				405					410					415	
Val	Ile	Pro	Asp	Thr	Pro	Ala	Glu	Ala	Gly	Gly	Leu	Lys	Glu	Asn	Asp
				420				425					430		
Val	Ile	Ile	Ser	Ile	Asn	Gly	Gln	Ser	Val	Val	Ser	Ala	Asn	Asp	Val
			435				440					445			
Ser	Asp	Val	Ile	Lys	Arg	Glu	Ser	Thr	Leu	Asn	Met	Val	Val	Arg	Arg
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<222> (38)...(1231)

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Pro Val Val Ile Val Ser Ala Ala Arg Thr Ile Ile Gly Ser Phe Asn
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ggg gcc tta gct gct gtt cct gtc cag gac ctg ggc tcc act gtc atc 151
Gly Ala Leu Ala Ala Val Pro Val Gln Asp Leu Gly Ser Thr Val Ile
           25           30           35

aaa gaa gtc ttg aag agg gcc act gtg gct ccg gaa gat gtg tct gag 199
Lys Glu Val Leu Lys Arg Ala Thr Val Ala Pro Glu Asp Val Ser Glu
           40           45           50

gtc atc ttt gga cat gtc ttg gca gca ggc tgt ggg cag aat cct gtt 247
Val Ile Phe Gly His Val Leu Ala Ala Gly Cys Gly Gln Asn Pro Val
           55           60           65           70

aga caa gcc agt gtg ggt gca gga att ccc tac tct gtt cca gca tgg 295
Arg Gln Ala Ser Val Gly Ala Gly Ile Pro Tyr Ser Val Pro Ala Trp
           75           80           85

agc tgc cag atg atc tgt ggg tca ggc cta aaa gct gtg tgc ctt gca 343
Ser Cys Gln Met Ile Cys Gly Ser Gly Leu Lys Ala Val Cys Leu Ala
           90           95          100

gtc cag tca ata ggg ata gga gac tcc agc att gtg gtt gca gga ggc 391
Val Gln Ser Ile Gly Ile Gly Asp Ser Ser Ile Val Val Ala Gly Gly
           105          110          115

atg gaa aat atg agc aag gct cct cac ttg gct tac ttg aga aca gga 439
Met Glu Asn Met Ser Lys Ala Pro His Leu Ala Tyr Leu Arg Thr Gly
           120          125          130

gta aag ata ggt gag atg cca ctg act gac agt ata ctc tgt gat ggt 487
Val Lys Ile Gly Glu Met Pro Leu Thr Asp Ser Ile Leu Cys Asp Gly
           135          140          145          150

ctt aca gat gca ttt cac aac tgt cat atg ggt att aca gct gaa aat 535
Leu Thr Asp Ala Phe His Asn Cys His Met Gly Ile Thr Ala Glu Asn
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gta gcc aca aaa tgg caa gtg agt aga gaa gat cag gac aag gtt gca 583
Val Ala Thr Lys Trp Gln Val Ser Arg Glu Asp Gln Asp Lys Val Ala
           170          175          180

gtt ctg tcc cag aac agg aca gag aat gca cag aaa gct ggc cat ttt 631
Val Leu Ser Gln Asn Arg Thr Glu Asn Ala Gln Lys Ala Gly His Phe
           185          190          195

gac aaa gag att gta cca gtt ttg gtg tca act aga aaa ggt ctt att 679
Asp Lys Glu Ile Val Pro Val Leu Val Ser Thr Arg Lys Gly Leu Ile
           200          205          210

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Glu Val Lys Thr Asp Glu Phe Pro Arg His Gly Ser Asn Ile Glu Ala
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acc cca gcc aat gct tca gga ata aat gat ggt gct gca gct gtt gct				823
Thr Pro Ala Asn Ala Ser Gly Ile Asn Asp Gly Ala Ala Ala Val Ala	250	255	260	
ctt atg aag aag tca gaa gct gat aaa cgt ggg ctt aca cct tta gca				871
Leu Met Lys Lys Ser Glu Ala Asp Lys Arg Gly Leu Thr Pro Leu Ala	265	270	275	
cgg ata gtt tcc tgg tcc caa gtg ggt gtg gag cct tcc att atg gga				919
Arg Ile Val Ser Trp Ser Gln Val Gly Val Glu Pro Ser Ile Met Gly	280	285	290	
ata gga cca att cca gcc ata aag caa gct gtt aca aaa gca ggt tgg				967
Ile Gly Pro Ile Pro Ala Ile Lys Gln Ala Val Thr Lys Ala Gly Trp	295	300	305	310
tca ctg gaa gat gtt gac ata ttt gaa atc aat gaa gcc ttt gca gct				1015
Ser Leu Glu Asp Val Asp Ile Phe Glu Ile Asn Glu Ala Phe Ala Ala	315	320	325	
gtc tct gct gca ata gtt aaa gaa ctt gga tta aac cca gag aag gtc				1063
Val Ser Ala Ala Ile Val Lys Glu Leu Gly Leu Asn Pro Glu Lys Val	330	335	340	
aat att gaa gga ggg gct ata gcc ttg ggc cac cct ctt gga gca tct				1111
Asn Ile Glu Gly Gly Ala Ile Ala Leu Gly His Pro Leu Gly Ala Ser	345	350	355	
ggc tgt cga att ctt gtg acc ctg tta cac aca ctg gag aga atg ggc				1159
Gly Cys Arg Ile Leu Val Thr Leu Leu His Thr Leu Glu Arg Met Gly	360	365	370	
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Arg Ser Arg Gly Val Ala Ala Leu Cys Ile Gly Gly Gly Met Gly Ile	375	380	385	390
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Ala Met Cys Val Gln Arg Glu *	395			
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aatcagagga ccaaagtaca gatggaaacc atttcctaca tcacaaaaaac ccaagtttac				1381
agcttggtact ttactttaat gtgtaatact caactcacgg tacaagacaa ttgcatttaa				1441
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Pro	Glu	Asp	Val	Ser	Glu	Val	Ile	Phe	Gly	His	Val	Leu	Ala	Ala	Gly	
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Cys	Gly	Gln	Asn	Pro	Val	Arg	Gln	Ala	Ser	Val	Gly	Ala	Gly	Ile	Pro	
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Tyr	Ser	Val	Pro	Ala	Trp	Ser	Cys	Gln	Met	Ile	Cys	Gly	Ser	Gly	Leu	
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Lys	Ala	Val	Cys	Leu	Ala	Val	Gln	Ser	Ile	Gly	Ile	Gly	Asp	Ser	Ser	
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Ile	Val	Val	Ala	Gly	Gly	Met	Glu	Asn	Met	Ser	Lys	Ala	Pro	His	Leu	
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Ala	Tyr	Leu	Arg	Thr	Gly	Val	Lys	Ile	Gly	Glu	Met	Pro	Leu	Thr	Asp	
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Ser	Ile	Leu	Cys	Asp	Gly	Leu	Thr	Asp	Ala	Phe	His	Asn	Cys	His	Met	
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Gly	Ile	Thr	Ala	Glu	Asn	Val	Ala	Thr	Lys	Trp	Gln	Val	Ser	Arg	Glu	
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Asp	Gln	Asp	Lys	Val	Ala	Val	Leu	Ser	Gln	Asn	Arg	Thr	Glu	Asn	Ala	
			180						185					190		
Gln	Lys	Ala	Gly	His	Phe	Asp	Lys	Glu	Ile	Val	Pro	Val	Leu	Val	Ser	
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gca gag tac aaa tgt aac acc aac aca gca att gaa cta aaa tta gtt	150
Ala Glu Tyr Lys Cys Asn Thr Asn Thr Ala Ile Glu Leu Lys Leu Val	
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Arg Phe Pro Glu Asp Leu Glu Asn Asp Ile Arg Thr Phe Phe Pro Glu	
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Tyr Thr His Gln Leu Phe Gly Asp Asp Glu Thr Ala Phe Gly Tyr Lys	
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ggt cta aag atc ctg tta tac tat att gct ggt agc ctg tca aca atg	294
Gly Leu Lys Ile Leu Leu Tyr Tyr Ile Ala Gly Ser Leu Ser Thr Met	
75 80 85	
ttc cgt gtt gaa tat gca tct aaa gtt gat gag aac ttt gac tgt gta	342
Phe Arg Val Glu Tyr Ala Ser Lys Val Asp Glu Asn Phe Asp Cys Val	
90 95 100	
gag gca gat gat gtt gag ggc aaa att aga caa atc att cca cct gga	390
Glu Ala Asp Asp Val Glu Gly Lys Ile Arg Gln Ile Ile Pro Pro Gly	
105 110 115	
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Phe Cys Thr Asn Thr Asn Asp Phe Leu Ser Leu Leu Glu Lys Glu Val	
120 125 130	
gat ttc aag cca ttc gga acc tta ctt cat acc tac tca gtt ctc agt	486
Asp Phe Lys Pro Phe Gly Thr Leu Leu His Thr Tyr Ser Val Leu Ser	
135 140 145 150	
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Pro Thr Gly Gly Glu Asn Phe Thr Phe Gln Ile Tyr Lys Ala Asp Met	
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Thr Cys Arg Gly Phe Arg Glu Tyr His Glu Arg Leu Gln Thr Phe Leu	
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Met Trp Phe Ile Glu Thr Ala Ser Phe Ile Asp Val Asp Asp Glu Arg	
185 190 195	
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Trp His Tyr Phe Leu Val Phe Glu Lys Tyr Asn Lys Asp Gly Ala Thr	
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ctc ttt gcg acc gta ggc tac atg aca gtc tat aat tac tat gtg tac	726
Leu Phe Ala Thr Val Gly Tyr Met Thr Val Tyr Asn Tyr Tyr Val Tyr	
215 220 225 230	
cca gac aaa acc cgg cca cgt gta agt cag atg ctg att ttg act cca	774
Pro Asp Lys Thr Arg Pro Arg Val Ser Gln Met Leu Ile Leu Thr Pro	
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Phe Gln Gly Gln Gly His Gly Ala Gln Leu Leu Glu Thr Val His Arg	
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Tyr Tyr Thr Glu Phe Pro Thr Val Leu Asp Ile Thr Ala Glu Asp Pro	
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Ser Lys Ser Tyr Val Lys Leu Arg Asp Phe Val Leu Val Lys Leu Cys	
280 285 290	
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Gln Asp Leu Pro Cys Phe Ser Arg Glu Lys Leu Met Gln Gly Phe Asn	
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315 320 325	
cac gct aga agg gtt tat gaa att ctt cga cta ctg gta act gac atg	1062
His Ala Arg Arg Val Tyr Glu Ile Leu Arg Leu Leu Val Thr Asp Met	
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Ser Asp Ala Glu Gln Tyr Arg Ser Tyr Arg Leu Asp Ile Lys Arg Arg	
345 350 355	
cta att agc cca tat aag aaa aag cag aga gat ctt gct aag atg aga	1158
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Lys Cys Leu Arg Pro Glu Glu Leu Thr Asn Gln Met Asn Gln Ile Glu	
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Glu Asp Tyr Arg Arg Val Ile Glu Arg Leu Ala Gln Glu *	
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cgc cag tac ctg cgt atc cgc act gtc cag ccc aag cct gac tat gga 157
Arg Gln Tyr Leu Arg Ile Arg Thr Val Gln Pro Lys Pro Asp Tyr Gly
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gct gct gtg gct ttc ttt gag gag aca gcc cgc cag ctg ggc ctg ggc 205
Ala Ala Val Ala Phe Phe Glu Glu Thr Ala Arg Gln Leu Gly Leu Gly
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tgt cag aaa gta gag gtg gca cct ggc tat gtg gtg acc gtg ttg acc 253
Cys Gln Lys Val Glu Val Ala Pro Gly Tyr Val Val Thr Val Leu Thr
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tgg cca ggc acc aac cct aca ctc tcc tcc atc ttg ctc aac tcc cac 301
Trp Pro Gly Thr Asn Pro Thr Leu Ser Ser Ile Leu Leu Asn Ser His
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Thr Asp Val Val Pro Val Phe Lys Glu His Trp Ser His Asp Pro Phe
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Glu Ala Phe Lys Asp Ser Glu Gly Tyr Ile Tyr Ala Arg Gly Ala Gln
          100           105           110

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Asp Met Lys Cys Val Ser Ile Gln Tyr Leu Glu Ala Val Arg Arg Leu
          115           120           125

aag gtg gag ggc cac cgg ttc ccc aga acc atc cac atg acc ttt gtg 493
Lys Val Glu Gly His Arg Phe Pro Arg Thr Ile His Met Thr Phe Val
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cct gat gag gag gtt ggg ggt cac caa ggc atg gag ctg ttc gtg cag 541
Pro Asp Glu Glu Val Gly Gly His Gln Gly Met Glu Leu Phe Val Gln
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cgg cct gag ttc cac gcc ctg agg gca ggc ttt gcc ctg gat gag ggc 589
Arg Pro Glu Phe His Ala Leu Arg Ala Gly Phe Ala Leu Asp Glu Gly
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ata gcc aat ccc act gat gcc ttc act gtc ttt tat agt gag cgg agt 637
Ile Ala Asn Pro Thr Asp Ala Phe Thr Val Phe Tyr Ser Glu Arg Ser
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ccc tgg tgg gtg cgg gtt acc agc act ggg agg cca ggc cat gcc tca 685
Pro Trp Trp Val Arg Val Thr Ser Thr Gly Arg Pro Gly His Ala Ser
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Arg Phe Met Glu Asp Thr Ala Ala Glu Lys Leu His Lys Val Val Asn
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tcc atc ctg gca ttc cgg gag aag gaa tgg cag agg ctg cag tca aac 781
Ser Ile Leu Ala Phe Arg Glu Lys Glu Trp Gln Arg Leu Gln Ser Asn
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Pro His Leu Lys Glu Gly Ser Val Thr Ser Val Asn Leu Thr Lys Leu  
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gag ggt ggc gtg gcc tat aac gtg ata cct gcc acc atg agc gcc agc 877  
Glu Gly Gly Val Ala Tyr Asn Val Ile Pro Ala Thr Met Ser Ala Ser  
260 265 270  
ttt gac ttc cgt gtg gca ccg gat gtg gac ttc aag gct ttt gag gag 925  
Phe Asp Phe Arg Val Ala Pro Asp Val Asp Phe Lys Ala Phe Glu Glu  
275 280 285  
cag ctg cag agc tgg tgc cag gca gct ggc gag ggg gtc acc cta gag 973  
Gln Leu Gln Ser Trp Cys Gln Ala Ala Gly Glu Gly Val Thr Leu Glu  
290 295 300  
ttt gct cag aag tgg atg cac ccc caa gtg aca cct act gat gac tca 1021  
Phe Ala Gln Lys Trp Met His Pro Gln Val Thr Pro Thr Asp Asp Ser  
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Leu Arg Gly Val Asp Ile Tyr Thr Arg Leu Leu Pro Ala Leu Ala Ser  
385 390 395 400  
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Val Pro Ala Leu Pro Ser Asp Ser \*  
405  
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35 40 45  
Cys Gln Lys Val Glu Val Ala Pro Gly Tyr Val Val Thr Val Leu Thr  
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Thr	Asp	Val	Val	Pro	Val	Phe	Lys	Glu	His	Trp	Ser	His	Asp	Pro	Phe
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Glu	Ala	Phe	Lys	Asp	Ser	Glu	Gly	Tyr	Ile	Tyr	Ala	Arg	Gly	Ala	Gln
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Asp	Met	Lys	Cys	Val	Ser	Ile	Gln	Tyr	Leu	Glu	Ala	Val	Arg	Arg	Leu
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Lys	Val	Glu	Gly	His	Arg	Phe	Pro	Arg	Thr	Ile	His	Met	Thr	Phe	Val
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Pro	Asp	Glu	Glu	Val	Gly	Gly	His	Gln	Gly	Met	Glu	Leu	Phe	Val	Gln
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Arg	Pro	Glu	Phe	His	Ala	Leu	Arg	Ala	Gly	Phe	Ala	Leu	Asp	Glu	Gly
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Pro	Trp	Trp	Val	Arg	Val	Thr	Ser	Thr	Gly	Arg	Pro	Gly	His	Ala	Ser
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Arg	Phe	Met	Glu	Asp	Thr	Ala	Ala	Glu	Lys	Leu	His	Lys	Val	Val	Asn
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Asn	Pro	Trp	Trp	Ala	Ala	Phe	Ser	Arg	Val	Cys	Lys	Asp	Met	Asn	Leu
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Thr	Leu	Glu	Pro	Glu	Ile	Met	Pro	Ala	Ala	Thr	Asp	Asn	Arg	Tyr	Ile
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Pro	Val	Leu	Leu	His	Asp	His	Asp	Glu	Arg	Leu	His	Glu	Ala	Val	Phe
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Leu	Arg	Gly	Val	Asp	Ile	Tyr	Thr	Arg	Leu	Leu	Pro	Ala	Leu	Ala	Ser
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65 70 75	
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Phe Phe Ala Lys Gln Val Ile Asn Asn Ala Cys Ala Thr Gln Ala Ile	
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Val Ser Val Leu Leu Asn Cys Thr His Gln Asp Val His Leu Gly Glu	
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Thr Leu Ser Glu Phe Lys Glu Phe Ser Gln Ser Phe Asp Ala Ala Met	
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Lys Gly Leu Ala Leu Ser Asn Ser Asp Val Ile Arg Gln Val His Asn	
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Ser Phe Ala Arg Gln Gln Met Phe Glu Phe Asp Thr Lys Thr Ser Ala	
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Lys Glu Glu Asp Ala Phe His Phe Val Ser Tyr Val Pro Val Asn Gly	
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Arg Leu Tyr Glu Leu Asp Gly Leu Arg Glu Gly Pro Ile Asp Leu Gly	
175 180 185	
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Ala Cys Asn Gln Asp Asp Trp Ile Ser Ala Val Arg Pro Val Ile Glu	
190 195 200 205	
aaa agg ata caa aag tac agt gaa ggt gaa att cga ttt aat tta atg	794
Lys Arg Ile Gln Lys Tyr Ser Glu Gly Glu Ile Arg Phe Asn Leu Met	
210 215 220	
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Ala Ile Val Ser Asp Arg Lys Met Ile Tyr Glu Gln Lys Ile Ala Glu	
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270 275 280 285	
atc aga agg aag cat aat tat ctg cct ttc att atg gaa ttg tta aag	1034
Ile Arg Arg Lys His Asn Tyr Leu Pro Phe Ile Met Glu Leu Leu Lys	
290 295 300	
act tta gca gaa cac cag cag tta ata cca cta gta gaa aag gca aaa	1082
Thr Leu Ala Glu His Gln Gln Leu Ile Pro Leu Val Glu Lys Ala Lys	
305 310 315	
gaa aaa cag aac gca aag aaa gct cag gaa acc aaa tga agatgttttc	1131
Glu Lys Gln Asn Ala Lys Lys Ala Gln Glu Thr Lys *	
320 325	

agatatgtac acattttctgc ttctgcacat attttcatgg aaaccattat gtataaagaa	1191
cttagagcaa catcctaatt ggctcagtcg acgtttggca atagtgccag cctgtcttgt	1251
ctttaatgca tggattcata aacttcttcc ctacctgcat catgtgcatg tagtgcata	1311
taaataagaa tgatattaag aatgctttcc caaattccat tatttgacat tgagtctgac	1371
aactgttagt tttctgggtg tccaactacc atatgaagct agaaaaatgca caaacgatat	1431
tccttatctg taatttaaatt acttaaaatt tgcaattgtc agatcttgat taaactgggt	1491
gtcttatttc ttctcatcat taacggaaaa aaaatcagta tttctatctt tgatatctaa	1551
gtgttttgag gattttaaaa ctgaatttta tctgctatac cagttatttg agaaagtatg	1611
attttaatgt aaatcattta aaaaggacaa aagtataatt tccagtgatt ttcactgctg	1671
tcagtagaaa agtaataaac atctcaattt taataaaaaa aaaaaaaaaa aaaaaaa	1728

<210> 56  
 <211> 329  
 <212> PRT  
 <213> Homo sapiens

<400> 56																	
Met Thr Gly Asn Ala Gly Glu Trp Cys Leu Met Glu Ser Asp Pro Gly																	
1 5 10 15																	
Val Phe Thr Glu Leu Ile Lys Gly Phe Gly Cys Arg Gly Ala Gln Val																	
20 25 30																	
Glu Glu Ile Trp Ser Leu Glu Pro Glu Asn Phe Glu Lys Leu Lys Pro																	
35 40 45																	
Val His Gly Leu Ile Phe Leu Phe Lys Trp Gln Pro Gly Glu Glu Pro																	
50 55 60																	
Ala Gly Ser Val Val Gln Asp Ser Arg Leu Asp Thr Ile Phe Phe Ala																	
65 70 75 80																	
Lys Gln Val Ile Asn Asn Ala Cys Ala Thr Gln Ala Ile Val Ser Val																	
85 90 95																	
Leu Leu Asn Cys Thr His Gln Asp Val His Leu Gly Glu Thr Leu Ser																	
100 105 110																	
Glu Phe Lys Glu Phe Ser Gln Ser Phe Asp Ala Ala Met Lys Gly Leu																	
115 120 125																	
Ala Leu Ser Asn Ser Asp Val Ile Arg Gln Val His Asn Ser Phe Ala																	
130 135 140																	
Arg Gln Gln Met Phe Glu Phe Asp Thr Lys Thr Ser Ala Lys Glu Glu																	
145 150 155 160																	
Asp Ala Phe His Phe Val Ser Tyr Val Pro Val Asn Gly Arg Leu Tyr																	
165 170 175																	
Glu Leu Asp Gly Leu Arg Glu Gly Pro Ile Asp Leu Gly Ala Cys Asn																	
180 185 190																	

Gln Asp Asp Trp Ile Ser Ala Val Arg Pro Val Ile Glu Lys Arg Ile  
 195 200 205  
 Gln Lys Tyr Ser Glu Gly Glu Ile Arg Phe Asn Leu Met Ala Ile Val  
 210 215 220  
 Ser Asp Arg Lys Met Ile Tyr Glu Gln Lys Ile Ala Glu Leu Gln Arg  
 225 230 235 240  
 Gln Leu Ala Glu Glu Glu Pro Met Asp Thr Asp Gln Gly Asn Ser Met  
 245 250 255  
 Leu Ser Ala Ile Gln Ser Glu Val Ala Lys Asn Gln Met Leu Ile Glu  
 260 265 270  
 Glu Glu Val Gln Lys Leu Lys Arg Tyr Lys Ile Glu Asn Ile Arg Arg  
 275 280 285  
 Lys His Asn Tyr Leu Pro Phe Ile Met Glu Leu Leu Lys Thr Leu Ala  
 290 295 300  
 Glu His Gln Gln Leu Ile Pro Leu Val Glu Lys Ala Lys Glu Lys Gln  
 305 310 315 320  
 Asn Ala Lys Lys Ala Gln Glu Thr Lys  
 325

<210> 57  
 <211> 1008  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)...(1008)

<400> 57  
 atg ccg gcg gtg ctg ggt ttt gaa ggc agc gcc aat aag att ggc gtg 48  
 Met Pro Ala Val Leu Gly Phe Glu Gly Ser Ala Asn Lys Ile Gly Val  
 1 5 10 15  
 ggc gtg gtg cgg gat ggc aag gtg ctg gcg aac ccg cgg cgg act tac 96  
 Gly Val Val Arg Asp Gly Lys Val Leu Ala Asn Pro Arg Arg Thr Tyr  
 20 25 30  
 gtc acg cct cct ggc aca gga ttc ctt cca ggt gat aca gcc agg cat 144  
 Val Thr Pro Pro Gly Thr Gly Phe Leu Pro Gly Asp Thr Ala Arg His  
 35 40 45  
 cac cga gct gtt atc cta gac ctg ctg cag gag gca cta aca gag tct 192  
 His Arg Ala Val Ile Leu Asp Leu Leu Gln Glu Ala Leu Thr Glu Ser  
 50 55 60  
 gga tta acc tcc cag gat atc gac tgc att gca tac acc aag ggc cct 240  
 Gly Leu Thr Ser Gln Asp Ile Asp Cys Ile Ala Tyr Thr Lys Gly Pro  
 65 70 75 80  
 ggc atg ggt gcc cca ctg gtt tct gtg gct gtt gtg gcc cgt act gtg 288  
 Gly Met Gly Ala Pro Leu Val Ser Val Ala Val Val Ala Arg Thr Val  
 85 90 95  
 gcc cag ctg tgg aat aag cca ttg gtg ggt gtg aac cac tgt ata ggc 336  
 Ala Gln Leu Trp Asn Lys Pro Leu Val Gly Val Asn His Cys Ile Gly  
 100 105 110  
 cac att gag atg ggc cgc ctc atc act gga gcc acc agc cca acc gtg 384  
 His Ile Glu Met Gly Arg Leu Ile Thr Gly Ala Thr Ser Pro Thr Val  
 115 120 125

ttg tat gtg agt gga gga aat acg cag gtg att gca tac tcg gaa cat	432
Leu Tyr Val Ser Gly Gly Asn Thr Gln Val Ile Ala Tyr Ser Glu His	
130 135 140	
cgt tac cgt atc ttt ggg gaa acc atc gat att gca gtg ggt aat tgt	480
Arg Tyr Arg Ile Phe Gly Glu Thr Ile Asp Ile Ala Val Gly Asn Cys	
145 150 155 160	
ctg gat cgt ttt gct cga gtg ctg aag att tct aac gac cca agt cca	528
Leu Asp Arg Phe Ala Arg Val Leu Lys Ile Ser Asn Asp Pro Ser Pro	
165 170 175	
gga tac aac att gaa cag atg gca aag cga ggc aag aag ctg gtt gag	576
Gly Tyr Asn Ile Glu Gln Met Ala Lys Arg Gly Lys Lys Leu Val Glu	
180 185 190	
ctg cca tac act gta aag ggg atg gac gtc tca ttc tca ggg atc ctg	624
Leu Pro Tyr Thr Val Lys Gly Met Asp Val Ser Phe Ser Gly Ile Leu	
195 200 205	
tct ttc att gag gat gta gcc cat cgg atg ctg gcc aca ggc gag tgt	672
Ser Phe Ile Glu Asp Val Ala His Arg Met Leu Ala Thr Gly Glu Cys	
210 215 220	
act cct gag gat ctg tgt ttc tcc ctg cag gaa act gtg ttt gca atg	720
Thr Pro Glu Asp Leu Cys Phe Ser Leu Gln Glu Thr Val Phe Ala Met	
225 230 235 240	
ctg gta gag atc aca gag cga gcc atg gca cat tgt ggc tcc cag gag	768
Leu Val Glu Ile Thr Glu Arg Ala Met Ala His Cys Gly Ser Gln Glu	
245 250 255	
gcc ctc att gtg gga gga gtg ggg tgt aat gtg agg cta cag gag atg	816
Ala Leu Ile Val Gly Gly Val Gly Cys Asn Val Arg Leu Gln Glu Met	
260 265 270	
atg gca aca atg tgc cag gaa cgt gga gcc cgg ctt ttt gct aca gat	864
Met Ala Thr Met Cys Gln Glu Arg Gly Ala Arg Leu Phe Ala Thr Asp	
275 280 285	
gag aga ttc tgt att gac aat gga gcg atg ata gcc cag gct ggc tgg	912
Glu Arg Phe Cys Ile Asp Asn Gly Ala Met Ile Ala Gln Ala Gly Trp	
290 295 300	
gag atg ttt cgg gct gga cac agg acc cca ctc agt gat tct ggg gtt	960
Glu Met Phe Arg Ala Gly His Arg Thr Pro Leu Ser Asp Ser Gly Val	
305 310 315 320	
aca cag agg tat cgg aca gat gaa gta gag gtg acc tgg agg gac taa	1008
Thr Gln Arg Tyr Arg Thr Asp Glu Val Glu Val Thr Trp Arg Asp *	
325 330 335	

<210> 58  
 <211> 335  
 <212> PRT  
 <213> Homo sapiens

<400> 58



Met	Pro	Ala	Val	Leu	Gly	Phe	Glu	Gly	Ser	Ala	Asn	Lys	Ile	Gly	Val
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Gly	Val	Val	Arg	Asp	Gly	Lys	Val	Leu	Ala	Asn	Pro	Arg	Arg	Thr	Tyr
			20					25					30		
Val	Thr	Pro	Pro	Gly	Thr	Gly	Phe	Leu	Pro	Gly	Asp	Thr	Ala	Arg	His
		35					40					45			
His	Arg	Ala	Val	Ile	Leu	Asp	Leu	Leu	Gln	Glu	Ala	Leu	Thr	Glu	Ser
	50					55				60					
Gly	Leu	Thr	Ser	Gln	Asp	Ile	Asp	Cys	Ile	Ala	Tyr	Thr	Lys	Gly	Pro
65				70						75				80	
Gly	Met	Gly	Ala	Pro	Leu	Val	Ser	Val	Ala	Val	Val	Ala	Arg	Thr	Val
			85						90					95	
Ala	Gln	Leu	Trp	Asn	Lys	Pro	Leu	Val	Gly	Val	Asn	His	Cys	Ile	Gly
		100						105					110		
His	Ile	Glu	Met	Gly	Arg	Leu	Ile	Thr	Gly	Ala	Thr	Ser	Pro	Thr	Val
	115						120					125			
Leu	Tyr	Val	Ser	Gly	Gly	Asn	Thr	Gln	Val	Ile	Ala	Tyr	Ser	Glu	His
	130					135					140				
Arg	Tyr	Arg	Ile	Phe	Gly	Glu	Thr	Ile	Asp	Ile	Ala	Val	Gly	Asn	Cys
145				150						155				160	
Leu	Asp	Arg	Phe	Ala	Arg	Val	Leu	Lys	Ile	Ser	Asn	Asp	Pro	Ser	Pro
			165						170					175	
Gly	Tyr	Asn	Ile	Glu	Gln	Met	Ala	Lys	Arg	Gly	Lys	Lys	Leu	Val	Glu
		180						185					190		
Leu	Pro	Tyr	Thr	Val	Lys	Gly	Met	Asp	Val	Ser	Phe	Ser	Gly	Ile	Leu
	195						200					205			
Ser	Phe	Ile	Glu	Asp	Val	Ala	His	Arg	Met	Leu	Ala	Thr	Gly	Glu	Cys
	210					215					220				
Thr	Pro	Glu	Asp	Leu	Cys	Phe	Ser	Leu	Gln	Glu	Thr	Val	Phe	Ala	Met
225				230						235				240	
Leu	Val	Glu	Ile	Thr	Glu	Arg	Ala	Met	Ala	His	Cys	Gly	Ser	Gln	Glu
			245						250					255	
Ala	Leu	Ile	Val	Gly	Gly	Val	Gly	Cys	Asn	Val	Arg	Leu	Gln	Glu	Met
		260						265					270		
Met	Ala	Thr	Met	Cys	Gln	Glu	Arg	Gly	Ala	Arg	Leu	Phe	Ala	Thr	Asp
		275					280					285			
Glu	Arg	Phe	Cys	Ile	Asp	Asn	Gly	Ala	Met	Ile	Ala	Gln	Ala	Gly	Trp
	290					295					300				
Glu	Met	Phe	Arg	Ala	Gly	His	Arg	Thr	Pro	Leu	Ser	Asp	Ser	Gly	Val
305				310						315				320	
Thr	Gln	Arg	Tyr	Arg	Thr	Asp	Glu	Val	Glu	Val	Thr	Trp	Arg	Asp	
			325						330					335	

<210> 59  
 <211> 2484  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (100)...(1260)

<400> 59  
 gggcgctcgtt aggggagcga gtcgtgaccg gttggggccac actcaacgtg ggacgaagct 60  
 tcgcctactg tttgactacg tgcgtgcagc ctcccctcg atg tcg gcc ctc gaa 114  
 Met Ser Ala Leu Glu  
 1 5  
 aag agc atg cac ctc ggc cgc ctt ccc tct cgc cca cct cta ccc ggc 162  
 Lys Ser Met His Leu Gly Arg Leu Pro Ser Arg Pro Pro Leu Pro Gly

	10	15	20	
agc ggg ggc agt cag agc gga gcc aag atg cga atg ggc cct gga aga	25	30	35	210
Ser Gly Gly Ser Gln Ser Gly Ala Lys Met Arg Met Gly Pro Gly Arg				
aag cgg gac ttt tcc cct gtt cct tgg agt cag tat ttt gag tcc atg	40	45	50	258
Lys Arg Asp Phe Ser Pro Val Pro Trp Ser Gln Tyr Phe Glu Ser Met				
gaa gat gta gaa gta gag aat gaa act ggc aag gat act ttt cga gtc	55	60	65	306
Glu Asp Val Glu Val Glu Asn Glu Thr Gly Lys Asp Thr Phe Arg Val				
tac aag agt ggt tca gag ggt cca gtc ctg ctc ctt ctg cat gga gga	70	75	80	354
Tyr Lys Ser Gly Ser Glu Gly Pro Val Leu Leu Leu Leu His Gly Gly				
ggt cat tct gcc ctt tct tgg gct gtg ttc acg gca gcg att att agt	90	95	100	402
Gly His Ser Ala Leu Ser Trp Ala Val Phe Thr Ala Ala Ile Ile Ser				
aga gtt cag tgt agg att gta gct ttg gat ctg cga agt cat ggt gaa	105	110	115	450
Arg Val Gln Cys Arg Ile Val Ala Leu Asp Leu Arg Ser His Gly Glu				
aca aag gtc aag aat cct gaa gat ctg tct gca gaa aca atg gca aaa	120	125	130	498
Thr Lys Val Lys Asn Pro Glu Asp Leu Ser Ala Glu Thr Met Ala Lys				
gac gtt ggc aat gtg gtt gaa gcc atg tat ggg gac ctt cct cct cca	135	140	145	546
Asp Val Gly Asn Val Val Glu Ala Met Tyr Gly Asp Leu Pro Pro Pro				
att atg ctg att gga cat agc atg ggt ggt gct att gca gtc cac aca	150	155	160	594
Ile Met Leu Ile Gly His Ser Met Gly Gly Ala Ile Ala Val His Thr				
gca tca tcc aac ctg gta cca agc ctc ttg ggt ctg tgc atg att gat	170	175	180	642
Ala Ser Ser Asn Leu Val Pro Ser Leu Leu Gly Leu Cys Met Ile Asp				
gtt gta gaa ggt aca gct atg gat gca ctt aat agc atg cag aat ttc	185	190	195	690
Val Val Glu Gly Thr Ala Met Asp Ala Leu Asn Ser Met Gln Asn Phe				
tta cgg ggt cgt cct aaa acc ttc aag tct ctg gag aat gct att gaa	200	205	210	738
Leu Arg Gly Arg Pro Lys Thr Phe Lys Ser Leu Glu Asn Ala Ile Glu				
tgg agt gtg aag agt ggc cag att cga aat ctg gag tct gcc cgt gtc	215	220	225	786
Trp Ser Val Lys Ser Gly Gln Ile Arg Asn Leu Glu Ser Ala Arg Val				
tca atg gtt ggc caa gtc aaa cag tgt gaa gga att aca agt cca gaa	230	235	240	834
Ser Met Val Gly Gln Val Lys Gln Cys Glu Gly Ile Thr Ser Pro Glu				
ggc tca aaa tct ata gtg gaa gga atc ata gag gaa gaa gaa gaa gat	250	255	260	882
Gly Ser Lys Ser Ile Val Glu Gly Ile Ile Glu Glu Glu Glu Glu Asp				

gag gaa gga agt gag tct ata agc aag agg aaa aag gaa gat gac atg	930
Glu Glu Gly Ser Glu Ser Ile Ser Lys Arg Lys Lys Glu Asp Asp Met	
265 270 275	
gag acc aag aaa gac cat cca tac acc tgg aga att gaa ctg gca aaa	978
Glu Thr Lys Lys Asp His Pro Tyr Thr Trp Arg Ile Glu Leu Ala Lys	
280 285 290	
aca gaa aaa tac tgg gac ggc tgg ttc cga ggc tta tcc aat ctc ttt	1026
Thr Glu Lys Tyr Trp Asp Gly Trp Phe Arg Gly Leu Ser Asn Leu Phe	
295 300 305	
ctt agt tgt ccc att cct aaa ttg ctg ctc ttg gct ggt gtt gat aga	1074
Leu Ser Cys Pro Ile Pro Lys Leu Leu Leu Ala Gly Val Asp Arg	
310 315 320 325	
ttg gat aaa gat ctg acc att ggc cag atg caa ggg aag ttc cag atg	1122
Leu Asp Lys Asp Leu Thr Ile Gly Gln Met Gln Gly Lys Phe Gln Met	
330 335 340	
cag gtc cta ccc cag tgt ggc cat gca gtc cat gag gat gcc cct gac	1170
Gln Val Leu Pro Gln Cys Gly His Ala Val His Glu Asp Ala Pro Asp	
345 350 355	
aag gta gct gaa gct gtt gcc act ttc ctg atc cgg cac agg ttt gca	1218
Lys Val Ala Glu Ala Val Ala Thr Phe Leu Ile Arg His Arg Phe Ala	
360 365 370	
gaa ccc atc ggt gga ttc cag tgt gtg ttt cct ggc tgt tag	1260
Glu Pro Ile Gly Gly Phe Gln Cys Val Phe Pro Gly Cys *	
375 380 385	
tgacctgctg tccaccctc ctcaacatcg agctctgttg taaatacgtc gcaccagagg	1320
ccactgtgat gccactgtct cctctccatc ccgcccagcc atgtgacact ggctccccgt	1380
agacgggcac cccgagatgt accaaccttt tcatgtattc tgccaaaagc attgttttcc	1440
agggcccttg accaacatcg gcttccccag tccagggtc cctgtctcct ttcccttccc	1500
tgtactgggg tagctcctgc ctgctctccc tgcgttgcc agggtaaagc ctccagattt	1560
gccatactga gcccctcttc ctagcatcag gcgatacatc tgagttcaaa tgtcttcca	1620
ggctcaggga cctccattcc ttgagattgt cttggcatgg ccagccctg cctcatggga	1680
tggacaatgc atggggtggt ctttattttt ccctttcaaa taaaacacta gtcaggtacc	1740
gttttatccc agtcgtactc ttccagggtt ggaagaccca gagaggccaa gatcccatcc	1800
ttagccatag cgagcgggtg tgggtggatag catcacaaga aacgagcctg aaaatcaggt	1860
ccagccggtc caagcacatg gcctcccatc tgggagagcc cactgtccca ctcccacatg	1920
tctgggcacc tgccctgggc tgaggccagg ctgctccagg ggcctcctgc gccctcacct	1980
gccacagagc aaccaggtt aaatacagcc catgcacaaa gccacaggcc aaagcctatg	2040
gaattgtttt taatcatcaa atttaacatc tttcataact gggtcctgga ggtgtgcagt	2100
gccccttgct ctcttcaaac ctacagcttc tctttgccat ttgtggattt cacatcactc	2160
cacacagaaa cattacagcc tggcatcccc agtctttgcc ttcttccagc tgccctcgaca	2220
cagcactgtg gcctgtccct attgcccagg cacgccattt ccaagggcag gaaggggcag	2280
tgctctgaag cccatctttt ctgtgactgt cttaggtgat gtgtagcccc ctccacctt	2340
ccactcaaca acctccacc cctgtcctgc tgcattggcc ggagtctggg acctactttg	2400
ttttttgtta tttatgacct tgtttaaaga aaataaatat ctcccaacct ttaaaaaaaaa	2460
aaaaaaaaa aaaaaaaaaa aaaa	2484

<210> 60  
 <211> 386  
 <212> PRT  
 <213> Homo sapiens

<400> 60

Met	Ser	Ala	Leu	Glu	Lys	Ser	Met	His	Leu	Gly	Arg	Leu	Pro	Ser	Arg
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Pro	Pro	Leu	Pro	Gly	Ser	Gly	Gly	Ser	Gln	Ser	Gly	Ala	Lys	Met	Arg
			20					25					30		
Met	Gly	Pro	Gly	Arg	Lys	Arg	Asp	Phe	Ser	Pro	Val	Pro	Trp	Ser	Gln
		35					40					45			
Tyr	Phe	Glu	Ser	Met	Glu	Asp	Val	Glu	Val	Glu	Asn	Glu	Thr	Gly	Lys
	50					55					60				
Asp	Thr	Phe	Arg	Val	Tyr	Lys	Ser	Gly	Ser	Glu	Gly	Pro	Val	Leu	Leu
65					70					75					80
Leu	Leu	His	Gly	Gly	Gly	His	Ser	Ala	Leu	Ser	Trp	Ala	Val	Phe	Thr
			85						90					95	
Ala	Ala	Ile	Ile	Ser	Arg	Val	Gln	Cys	Arg	Ile	Val	Ala	Leu	Asp	Leu
			100					105					110		
Arg	Ser	His	Gly	Glu	Thr	Lys	Val	Lys	Asn	Pro	Glu	Asp	Leu	Ser	Ala
		115					120					125			
Glu	Thr	Met	Ala	Lys	Asp	Val	Gly	Asn	Val	Val	Glu	Ala	Met	Tyr	Gly
	130					135					140				
Asp	Leu	Pro	Pro	Pro	Ile	Met	Leu	Ile	Gly	His	Ser	Met	Gly	Gly	Ala
145					150					155					160
Ile	Ala	Val	His	Thr	Ala	Ser	Ser	Asn	Leu	Val	Pro	Ser	Leu	Leu	Gly
			165						170					175	
Leu	Cys	Met	Ile	Asp	Val	Val	Glu	Gly	Thr	Ala	Met	Asp	Ala	Leu	Asn
			180					185					190		
Ser	Met	Gln	Asn	Phe	Leu	Arg	Gly	Arg	Pro	Lys	Thr	Phe	Lys	Ser	Leu
		195					200					205			
Glu	Asn	Ala	Ile	Glu	Trp	Ser	Val	Lys	Ser	Gly	Gln	Ile	Arg	Asn	Leu
	210					215					220				
Glu	Ser	Ala	Arg	Val	Ser	Met	Val	Gly	Gln	Val	Lys	Gln	Cys	Glu	Gly
225					230					235					240
Ile	Thr	Ser	Pro	Glu	Gly	Ser	Lys	Ser	Ile	Val	Glu	Gly	Ile	Ile	Glu
			245						250					255	
Glu	Glu	Glu	Glu	Asp	Glu	Glu	Gly	Ser	Glu	Ser	Ile	Ser	Lys	Arg	Lys
			260					265					270		
Lys	Glu	Asp	Asp	Met	Glu	Thr	Lys	Lys	Asp	His	Pro	Tyr	Thr	Trp	Arg
		275					280					285			
Ile	Glu	Leu	Ala	Lys	Thr	Glu	Lys	Tyr	Trp	Asp	Gly	Trp	Phe	Arg	Gly
	290					295					300				
Leu	Ser	Asn	Leu	Phe	Leu	Ser	Cys	Pro	Ile	Pro	Lys	Leu	Leu	Leu	Leu
305					310					315					320
Ala	Gly	Val	Asp	Arg	Leu	Asp	Lys	Asp	Leu	Thr	Ile	Gly	Gln	Met	Gln
			325						330					335	
Gly	Lys	Phe	Gln	Met	Gln	Val	Leu	Pro	Gln	Cys	Gly	His	Ala	Val	His
			340					345					350		
Glu	Asp	Ala	Pro	Asp	Lys	Val	Ala	Glu	Ala	Val	Ala	Thr	Phe	Leu	Ile
		355					360					365			
Arg	His	Arg	Phe	Ala	Glu	Pro	Ile	Gly	Gly	Phe	Gln	Cys	Val	Phe	Pro
	370					375					380				
Gly	Cys														
385															

<210> 61  
 <211> 2074  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (79)...(1812)

<400> 61  
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tctgaggact gtttcacc atg cag tgg cta atg agg ttc cgg acc ctc tgg 111  
Met Gln Trp Leu Met Arg Phe Arg Thr Leu Trp  
1 5 10

ggc atc cac aaa tcc ttc cac aac atc cac cct gcc cct tca cag ctg 159  
Gly Ile His Lys Ser Phe His Asn Ile His Pro Ala Pro Ser Gln Leu  
15 20 25

cgc tgc cgg tct tta tca gaa ttt gga gcc cca aga tgg aat gac tat 207  
Arg Cys Arg Ser Leu Ser Glu Phe Gly Ala Pro Arg Trp Asn Asp Tyr  
30 35 40

gaa gta ccg gag gaa ttt aac ttt gca agt tat gta ctg gac tac tgg 255  
Glu Val Pro Glu Glu Phe Asn Phe Ala Ser Tyr Val Leu Asp Tyr Trp  
45 50 55

gct caa aag gag aag gag ggc aag aga ggt cca aat cca gct ttt tgg 303  
Ala Gln Lys Glu Lys Glu Gly Lys Arg Gly Pro Asn Pro Ala Phe Trp  
60 65 70 75

tgg gtg aat ggc caa ggg gat gaa gta aag tgg agc ttc aga gag atg 351  
Trp Val Asn Gly Gln Gly Asp Glu Val Lys Trp Ser Phe Arg Glu Met  
80 85 90

gga gac cta acc cgc cgt gta gcc aac gtc ttc aca cag acc tgt ggc 399  
Gly Asp Leu Thr Arg Arg Val Ala Asn Val Phe Thr Gln Thr Cys Gly  
95 100 105

cta caa cag gga gac cat ctg gcc ttg atg ctg cct cga gtt cct gag 447  
Leu Gln Gln Gly Asp His Leu Ala Leu Met Leu Pro Arg Val Pro Glu  
110 115 120

tgg tgg ctg gtg gct gtg ggc tgc atg cga aca ggg atc atc ttc att 495  
Trp Trp Leu Val Ala Val Gly Cys Met Arg Thr Gly Ile Ile Phe Ile  
125 130 135

cct gcg acc atc ctg ttg aag gcc aaa gac att ctc tat cga cta cag 543  
Pro Ala Thr Ile Leu Leu Lys Ala Lys Asp Ile Leu Tyr Arg Leu Gln  
140 145 150 155

ttg tct aaa gcc aag ggc att gtg acc ata gat gcc ctt gcc tca gag 591  
Leu Ser Lys Ala Lys Gly Ile Val Thr Ile Asp Ala Leu Ala Ser Glu  
160 165 170

gtg gac tcc ata gct tct cag tgc ccc tct ctg aaa acc aag ctc ctg 639  
Val Asp Ser Ile Ala Ser Gln Cys Pro Ser Leu Lys Thr Lys Leu Leu  
175 180 185

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Val Ser Asp His Ser Arg Glu Gly Trp Leu Asp Phe Arg Ser Leu Val  
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Lys Ser Ala Ser Pro Glu His Thr Cys Val Lys Ser Lys Thr Leu Asp  
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Pro Met Val Ile Phe Phe Thr Ser Gly Thr Thr Gly Phe Pro Lys Met  
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Ala Lys His Ser His Gly Leu Ala Leu Gln Pro Ser Phe Pro Gly Ser	
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Arg Lys Leu Arg Ser Leu Lys Thr Ser Asp Val Ser Trp Cys Leu Ser	
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Asp Ser Gly Trp Ile Val Ala Thr Ile Trp Thr Leu Val Glu Pro Trp	
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Thr Ala Gly Cys Thr Val Phe Ile His His Leu Pro Gln Phe Asp Thr	
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Lys Val Ile Ile Gln Thr Leu Leu Lys Tyr Pro Ile Asn His Phe Trp	
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Gly Val Ser Ser Ile Tyr Arg Met Ile Leu Gln Gln Asp Phe Thr Ser	
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Ile Arg Phe Pro Ala Leu Glu His Cys Tyr Thr Gly Gly Glu Val Val	
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Leu Pro Lys Asp Gln Glu Glu Trp Lys Arg Arg Thr Gly Leu Leu Leu	
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Tyr Glu Asn Tyr Gly Gln Ser Glu Thr Gly Leu Ile Cys Ala Thr Tyr	
365 370 375	
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Trp Gly Met Lys Ile Lys Pro Gly Phe Met Gly Lys Ala Thr Pro Pro	
380 385 390 395	
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Tyr Asp Val Gln Val Ile Asp Asp Lys Gly Ser Ile Leu Pro Pro Asn	
400 405 410	
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Thr Glu Gly Asn Ile Gly Ile Arg Ile Lys Pro Val Arg Pro Val Ser	
415 420 425	
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Leu Phe Met Cys Tyr Glu Gly Asp Pro Glu Lys Thr Ala Lys Val Glu	
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Cys Gly Asp Phe Tyr Asn Thr Gly Asp Arg Gly Lys Met Asp Glu Glu	
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Gly Tyr Ile Cys Phe Leu Gly Arg Ser Asp Asp Ile Ile Asn Ala Ser	
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 Gly Glu Val Val Lys Ala Phe Ile Val Leu Thr Pro Gln Phe Leu Ser  
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 His Asp Lys Asp Gln Leu Thr Lys Glu Leu Gln Gln His Val Lys Ser  
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 Lys Glu Thr Gly Gln Met \*  
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 Ser Glu Phe Gly Ala Pro Arg Trp Asn Asp Tyr Glu Val Pro Glu Glu  
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 Phe Asn Phe Ala Ser Tyr Val Leu Asp Tyr Trp Ala Gln Lys Glu Lys  
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 Glu Gly Lys Arg Gly Pro Asn Pro Ala Phe Trp Trp Val Asn Gly Gln  
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 Gly Asp Glu Val Lys Trp Ser Phe Arg Glu Met Gly Asp Leu Thr Arg  
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 Arg Val Ala Asn Val Phe Thr Gln Thr Cys Gly Leu Gln Gln Gly Asp  
 100 105 110  
 His Leu Ala Leu Met Leu Pro Arg Val Pro Glu Trp Trp Leu Val Ala  
 115 120 125  
 Val Gly Cys Met Arg Thr Gly Ile Ile Phe Ile Pro Ala Thr Ile Leu  
 130 135 140  
 Leu Lys Ala Lys Asp Ile Leu Tyr Arg Leu Gln Leu Ser Lys Ala Lys  
 145 150 155 160  
 Gly Ile Val Thr Ile Asp Ala Leu Ala Ser Glu Val Asp Ser Ile Ala

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Val	Ala	Thr	Ile	Trp	Thr	Leu	Val	Glu	Pro	Trp	Thr	Ala	Gly	Cys	Thr		
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Val	Phe	Ile	His	His	Leu	Pro	Gln	Phe	Asp	Thr	Lys	Val	Ile	Ile	Gln		
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Thr	Leu	Leu	Lys	Tyr	Pro	Ile	Asn	His	Phe	Trp	Gly	Val	Ser	Ser	Ile		
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Leu	Gly	Arg	Ser	Asp	Asp	Ile	Ile	Asn	Ala	Ser	Gly	Tyr	Arg	Ile	Gly		
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agctgctcgc gcacgctgct gccaaagctgc agg atg gtg cac gta gcc agg ctg 174  
Met Val His Val Ala Arg Leu  
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Leu Leu Leu Leu Leu Thr Phe Phe Leu Arg Thr Asp Ala Glu Thr Pro  
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Pro Arg Phe Thr Arg Thr Pro Val Asp Gln Thr Gly Val Ser Gly Gly  
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Val Trp Asn Lys Lys Gly Lys Lys Val Ser Asn Gln Arg Phe Glu Val  
60 65 70

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Ile Glu Phe Asp Asp Gly Ser Gly Ser Val Leu Arg Ile Gln Pro Leu  
75 80 85

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Gln Ile Pro Arg Gly Phe Pro Thr Ile Asp Met Gly Pro Gln Leu Lys  
120 125 130 135

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Val Val Glu Arg Thr Arg Thr Ala Thr Met Leu Cys Ala Ala Ser Gly  
140 145 150

aat ccg gat cca gaa atc act tgg ttt aaa gat ttc tta cct gtg gac 654  
Asn Pro Asp Pro Glu Ile Thr Trp Phe Lys Asp Phe Leu Pro Val Asp  
155 160 165

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Thr Ser Asn Asn Asn Gly Arg Ile Lys Gln Leu Arg Ser Glu Ser Ile  
170 175 180

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tct gac caa gga aaa tat gag tgt gtt gcc acc aac agc gcg ggc act 798  
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Arg Tyr Ser Ala Pro Ala Asn Leu Tyr Val Arg Glu Leu Arg Glu Val	
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Arg Arg Val Pro Pro Arg Phe Ser Ile Pro Pro Thr Asn His Glu Ile	
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Met Pro Gly Gly Ser Val Asn Ile Thr Cys Val Ala Val Gly Ser Pro	
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Gln Ser Ala Asn Tyr Thr Cys Val Ala Met Ser Thr Leu Gly Val Ile	
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Glu Ala Ile Ala Gln Ile Thr Val Lys Ala Leu Pro Lys Pro Pro Gly	
315 320 325	
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Val Gln Ala Arg Met Leu Ser Ser Thr Thr Ile Leu Val Gln Trp Lys	
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555 560 565	
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Thr Ser Tyr Arg Leu Gln Gly Leu Lys Pro Asn Ser Leu Tyr Tyr Phe	
570 575 580	
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Arg Leu Ala Ala Arg Ser Pro Gln Gly Leu Gly Ala Ser Thr Ala Glu	
585 590 595	
ata tca gct aga acc atg cag tca aag ccg tca gct cct cct caa gac	1998
Ile Ser Ala Arg Thr Met Gln Ser Lys Pro Ser Ala Pro Pro Gln Asp	
600 605 610 615	
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Ile Ser Cys Thr Ser Pro Ser Ser Thr Ser Ile Leu Val Ser Trp Gln	
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Gly Ile Pro Ser Asp Thr Thr Lys Tyr Leu Leu Glu Gln Leu Glu Lys	
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Trp Thr Glu Tyr Arg Ile Thr Val Thr Ala His Thr Asp Val Gly Pro	
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Ser	Gly	Pro	Pro	Arg	Lys	Val	Glu	Val	Glu	Ala	Val	Asn	Ser	Thr	Ser		
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Val	Lys	Val	Ser	Trp	Arg	Ser	Pro	Val	Pro	Asn	Lys	Gln	His	Gly	Gln		
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	Leu Lys Pro Asp Thr Thr Tyr Asp Val Lys Val Arg Ala His Thr Ser			
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	Thr Ser Val Leu Leu Ser Trp Glu Ile Pro Glu Asn Tyr Asn Ser Ala			
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	Met Pro Phe Lys Ile Leu Tyr Asp Asp Gly Lys Met Val Glu Glu Val			
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	Asp Gly Arg Ala Thr Gln Lys Leu Ile Val Asn Leu Lys Pro Glu Lys			
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	Ser Tyr Ser Phe Val Leu Thr Asn Arg Gly Asn Ser Ala Gly Gly Leu			
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	Pro Ala Phe Ile Gly Lys Thr Asn Leu Asp Gly Met Ile Thr Val Gln			
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Pro	Leu	Ala	Glu	Thr	Thr	Glu	Asp	Phe	Trp	Arg	Met	Leu	Trp	Glu	His		
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Thr	*																



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Gln Thr Gly Val Ser Gly Gly Val Ala Ser Phe Ile Cys Gln Ala Thr
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Gly Asp Pro Arg Pro Lys Ile Val Trp Asn Lys Lys Gly Lys Lys Val
 50          55          60
Ser Asn Gln Arg Phe Glu Val Ile Glu Phe Asp Asp Gly Ser Gly Ser
 65          70          75          80
Val Leu Arg Ile Gln Pro Leu Arg Thr Pro Arg Asp Glu Ala Ile Tyr
 85          90          95
Glu Cys Val Ala Ser Asn Asn Val Gly Glu Ile Ser Val Ser Thr Arg
100          105          110
Leu Thr Val Leu Arg Glu Asp Gln Ile Pro Arg Gly Phe Pro Thr Ile
115          120          125
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Lys Asp Phe Leu Pro Val Asp Thr Ser Asn Asn Asn Gly Arg Ile Lys
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Cys Val Ala Val Gly Ser Pro Met Pro Tyr Val Lys Trp Met Leu Gly
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Ala Leu Pro Lys Pro Pro Gly Thr Pro Val Val Thr Glu Ser Thr Ala
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Tyr Tyr Ile Ile Gln His Lys Pro Lys Asn Ser Glu Glu Leu Tyr Lys
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Arg	Ile	Thr	Ile	Glu	Pro	Gly	Thr	Ser	Tyr	Arg	Leu	Gln	Gly	Leu	Lys
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	Lys	Gln	Leu	Gln	Ser	Gly	Gln	Glu	Tyr	Val	Phe	Phe	Val	Leu	Ala	Val
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	Met	Glu	His	Ala	Glu	Ser	Lys	Met	Tyr	Ala	Thr	Ser	Pro	Tyr	Ser	Asp
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	Ser	Asp	Ser	Arg	Lys	Ser	Ser	Ile	Pro	Asn	Asn	Lys	Glu	Ile	Pro	Ser
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	His	His	Pro	Thr	Asp	Pro	Val	Glu	Leu	Arg	Arg	Leu	Asn	Phe	Gln	Thr
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	Pro	Gly	Met	Ala	Ser	His	Pro	Pro	Ile	Pro	Ile	Leu	Glu	Leu	Ala	Asp
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His Ile Glu Arg Leu Lys Ala Asn Asp Asn Leu Lys Phe Ser Gln Glu  
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 Tyr Glu Ser Ile Asp Pro Gly Gln Gln Phe Thr Trp Glu His Ser Asn  
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 Asp His Gly Val Pro Glu His Pro Thr Pro Phe Leu Ala Phe Leu Arg  
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 Tyr Glu Ser Thr Arg Val Cys Leu Gln Pro Ile Arg Gly Val Glu Gly  
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 Trp Arg Met Leu Trp Glu His Asn Ser Thr Ile Val Val Met Leu Thr  
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 Tyr Asn Met Pro Gln Tyr Ile Leu Arg Glu Phe Lys Val Thr Asp Ala  
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 Pro Glu Gln Gly Val Pro Lys Ser Gly Glu Gly Phe Ile Asp Phe Ile  
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 Gly Gln Val His Lys Thr Lys Glu Gln Phe Gly Gln Asp Gly Pro Ile

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	1845		1850		1855	
Leu Ser Ile Val Leu Glu Arg Met Arg Tyr Glu Gly Val Val Asp Ile						
	1860		1865		1870	
Phe Gln Thr Val Lys Met Leu Arg Thr Gln Arg Pro Ala Met Val Gln						
	1875		1880		1885	
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 Met Arg Pro Ala Pro Ile Ala Leu Trp Leu Arg Leu Val Leu Ala Leu  
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 Ala Leu Val Arg Pro Arg Ala Val Gly Trp Ala Pro Val Arg Ala Pro  
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atc tat gtc agc agc tgg gcc gtc cag gtg tcc cag ggt aac cgg gag 204  
 Ile Tyr Val Ser Ser Trp Ala Val Gln Val Ser Gln Gly Asn Arg Glu  
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gtc gag cgc ctg gca cgc aaa ttc ggc ttc gtc aac ctg ggg ccg atc 252  
 Val Glu Arg Leu Ala Arg Lys Phe Gly Phe Val Asn Leu Gly Pro Ile  
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ttc cct gac ggg cag tac ttt cac ctg cgg cac cgg ggc gtg gtc cag 300  
 Phe Pro Asp Gly Gln Tyr Phe His Leu Arg His Arg Gly Val Val Gln  
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cag tcc ctg acc ccg cac tgg ggc cac cgc ctg cac ctg aag aaa aac 348  
 Gln Ser Leu Thr Pro His Trp Gly His Arg Leu His Leu Lys Lys Asn  
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ccc aag gtg cag tgg ttc cag cag cag acg ctg cag cgg cgg gtg aaa 396  
 Pro Lys Val Gln Trp Phe Gln Gln Gln Thr Leu Gln Arg Arg Val Lys  
 100 105 110

cgc tct gtc gtg gtg ccc acg gac ccc tgg ttc tcc aag cag tgg tac 444  
 Arg Ser Val Val Val Pro Thr Asp Pro Trp Phe Ser Lys Gln Trp Tyr  
 115 120 125

atg aac agc gag gcc caa cca gac ctg agc atc ctg cag gcc tgg agt 492  
 Met Asn Ser Glu Ala Gln Pro Asp Leu Ser Ile Leu Gln Ala Trp Ser  
 130 135 140

cag ggg ctg tca ggc cag ggc atc gtg gtc tct gtg ctg gac gat ggc 540

Gln 145	Gly	Leu	Ser	Gly	Gln 150	Gly	Ile	Val	Val	Ser 155	Val	Leu	Asp	Asp	Gly 160	
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Ile	Glu	Lys	Asp	His 165	Pro	Asp	Leu	Trp	Ala 170	Asn	Tyr	Asp	Pro	Leu	Ala 175	
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Ser	Tyr	Asp	Phe 180	Asn	Asp	Tyr	Asp	Pro	Asp	Pro	Gln	Pro	Arg	Tyr	Thr 190	
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Pro	Ser	Lys 195	Glu	Asn	Arg	His	Gly 200	Thr	Arg	Cys	Ala	Gly 205	Glu	Val	Ala	
gcg	atg	gcc	aac	aat	ggc	ttc	tgt	ggg	gtg	ggg	gtc	gct	ttc	aac	gcc	732
Ala	Met	Ala	Asn	Asn	Gly	Phe 215	Cys	Gly	Val	Gly	Val	Ala	Phe	Asn	Ala	
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Arg	Ile	Gly	Gly	Val	Arg	Met	Leu	Asp	Gly	Thr	Ile	Thr	Asp	Val	Ile 240	
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Glu	Ala	Gln	Ser	Leu	Ser	Leu	Gln	Pro	Gln	His	Ile	His	Ile	Tyr	Ser 255	
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gcc	agc	tgg	ggg	ccc	gag	gac	gac	ggc	cgc	acg	gtg	gac	ggc	ccc	ggc	876
Ala	Ser	Trp	Gly	Pro	Glu	Asp	Asp	Gly	Arg	Thr	Val	Asp	Gly	Pro	Gly	
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265																
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Ile	Leu	Thr	Arg	Glu	Ala	Phe	Arg	Arg	Gly	Val	Thr	Lys	Gly	Arg	Gly	
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280																
285																
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Gly	Leu	Gly	Thr	Leu	Phe	Ile	Trp	Ala	Ser	Gly	Asn	Gly	Gly	Leu	His	
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295																
300																
tac	gac	aac	tgc	aac	tgc	gac	ggc	tac	acc	aac	agc	atc	cac	acg	ctt	1020
Tyr	Asp	Asn	Cys	Asn	Cys	Asp	Gly	Tyr	Thr	Asn	Ser	Ile	His	Thr	Leu	
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Ser	Val	Gly	Ser	Thr	Thr	Gln	Gln	Gly	Arg	Val	Pro	Trp	Tyr	Ser	Glu	
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gcc	tgc	gcc	tcc	acc	ctc	acc	acc	acc	tac	agc	agc	ggc	gtg	gcc	acc	1116
Ala	Cys	Ala	Ser	Thr	Leu	Thr	Thr	Thr	Tyr	Ser	Ser	Gly	Val	Ala	Thr	
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Asp	Pro	Gln	Ile	Val	Thr	Thr	Asp	Leu	His	His	Gly	Cys	Thr	Asp	Gln	
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His	Thr	Gly	Thr	Ser	Ala	Ser	Ala	Pro	Leu	Ala	Ala	Gly	Met	Ile	Ala	
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375																
380																
cta	gcg	ctg	gag	gcc	aac	ccg	ttc	ctg	acg	tgg	aga	gac	atg	cag	cac	1260
Leu	Ala	Leu	Glu	Ala	Asn	Pro	Phe	Leu	Thr	Trp	Arg	Asp	Met	Gln	His	

385		390		395		400										
ctg	gtg	gtc	cgc	gcg	tcc	aag	ccg	gcg	cac	ctg	cag	gcc	gag	gac	tgg	1308
Leu	Val	Val	Arg	Ala	Ser	Lys	Pro	Ala	His	Leu	Gln	Ala	Glu	Asp	Trp	
			405						410					415		
agg	acc	aac	ggc	gtg	ggg	cgc	caa	gtg	agc	cat	cac	tac	gga	tac	ggg	1356
Arg	Thr	Asn	Gly	Val	Gly	Arg	Gln	Val	Ser	His	His	Tyr	Gly	Tyr	Gly	
			420					425					430			
ctg	ctg	gac	gcc	ggg	ctg	ctg	gtg	gac	acc	gcc	cgc	acc	tgg	ctg	ccc	1404
Leu	Leu	Asp	Ala	Gly	Leu	Leu	Val	Asp	Thr	Ala	Arg	Thr	Trp	Leu	Pro	
		435					440					445				
acc	cag	ccg	cag	agg	aag	tgc	gcc	gtc	cgg	gtc	cag	agc	cgc	ccc	acc	1452
Thr	Gln	Pro	Gln	Arg	Lys	Cys	Ala	Val	Arg	Val	Gln	Ser	Arg	Pro	Thr	
	450					455					460					
ccc	atc	ctg	ccg	ctg	atc	tac	atc	agg	gaa	aac	gta	tcg	gcc	tgc	gcc	1500
Pro	Ile	Leu	Pro	Leu	Ile	Tyr	Ile	Arg	Glu	Asn	Val	Ser	Ala	Cys	Ala	
465					470				475					480		
ggc	ctc	cac	aac	tcc	atc	cgc	tcg	ctg	gag	cac	gtg	cag	gcg	cag	ctg	1548
Gly	Leu	His	Asn	Ser	Ile	Arg	Ser	Leu	Glu	His	Val	Gln	Ala	Gln	Leu	
			485					490					495			
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Thr	Leu	Ser	Tyr	Ser	Arg	Arg	Gly	Asp	Leu	Glu	Ile	Ser	Leu	Thr	Ser	
			500					505					510			
ccc	atg	ggc	acg	cgc	tcc	aca	ctc	gtg	gcc	ata	cga	ccc	ttg	gac	gtc	1644
Pro	Met	Gly	Thr	Arg	Ser	Thr	Leu	Val	Ala	Ile	Arg	Pro	Leu	Asp	Val	
		515					520					525				
agc	act	gaa	ggc	tac	aac	aac	tgg	gtc	ttc	atg	tcc	acc	cac	ttc	tgg	1692
Ser	Thr	Glu	Gly	Tyr	Asn	Asn	Trp	Val	Phe	Met	Ser	Thr	His	Phe	Trp	
	530					535					540					
gat	gag	aac	cca	cag	ggc	gtg	tgg	acc	ctg	ggc	cta	gag	aac	aag	ggc	1740
Asp	Glu	Asn	Pro	Gln	Gly	Val	Trp	Thr	Leu	Gly	Leu	Glu	Asn	Lys	Gly	
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tac	tat	ttc	aac	acg	ggg	acg	ttg	tac	cgc	tac	acg	ctg	ctg	ctc	tat	1788
Tyr	Tyr	Phe	Asn	Thr	Gly	Thr	Leu	Tyr	Arg	Tyr	Thr	Leu	Leu	Leu	Tyr	
			565					570					575			
ggg	acg	gcc	gag	gac	atg	aca	gcg	cgg	cct	aca	ggc	ccc	cag	gtg	acc	1836
Gly	Thr	Ala	Glu	Asp	Met	Thr	Ala	Arg	Pro	Thr	Gly	Pro	Gln	Val	Thr	
			580					585				590				
agc	agc	gcg	tgt	gtg	cag	cgg	gac	aca	gag	ggg	ctg	tgc	cag	gcg	tgt	1884
Ser	Ser	Ala	Cys	Val	Gln	Arg	Asp	Thr	Glu	Gly	Leu	Cys	Gln	Ala	Cys	
		595					600					605				
gac	ggc	ccc	gcc	tac	atc	ctg	gga	cag	ctc	tgc	ctg	gcc	tac	tgc	ccc	1932
Asp	Gly	Pro	Ala	Tyr	Ile	Leu	Gly	Gln	Leu	Cys	Leu	Ala	Tyr	Cys	Pro	
	610					615					620					
ccg	cgg	ttc	ttc	aac	cac	aca	agg	ctg	gtg	acc	gct	ggg	cct	ggg	cac	1980
Pro	Arg	Phe	Phe	Asn	His	Thr	Arg	Leu	Val	Thr	Ala	Gly	Pro	Gly	His	
625					630					635					640	

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 Thr Ala Ala Pro Ala Leu Arg Val Cys Ser Ser Cys His Ala Ser Cys  
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tac acc tgc cgc ggc ggc tcc ccg agg gac tgc acc tcc tgt ccc cca 2076  
 Tyr Thr Cys Arg Gly Gly Ser Pro Arg Asp Cys Thr Ser Cys Pro Pro  
 660 665 670

tcc tcc acg ctg gac cag cag cag ggc tcc tgc atg gga ccc acc acc 2124  
 Ser Ser Thr Leu Asp Gln Gln Gln Gly Ser Cys Met Gly Pro Thr Thr  
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ccc gac agc cgc ccc cgg ctt aga gct gcc gcc tgt ccc cac cac cgc 2172  
 Pro Asp Ser Arg Pro Arg Leu Arg Ala Ala Ala Cys Pro His His Arg  
 690 695 700

tgc cca gcc tcg gcc atg gtg ctg agc ctc ctg gcc gtg acc ctc gga 2220  
 Cys Pro Ala Ser Ala Met Val Leu Ser Leu Leu Ala Val Thr Leu Gly  
 705 710 715 720

ggc ccc gtc ctc tgc ggc atg tcc atg gac ctc cca cta tac gcc tgg 2268  
 Gly Pro Val Leu Cys Gly Met Ser Met Asp Leu Pro Leu Tyr Ala Trp  
 725 730 735

ctc tcc cgt gcc agg gcc acc ccc acc aaa ccc cag gtc tgg ctg cca 2316  
 Leu Ser Arg Ala Arg Ala Thr Pro Thr Lys Pro Gln Val Trp Leu Pro  
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gct gga acc tga agttgtcagc tcagaaagcg accttgcccc cgcctgggtc 2368  
 Ala Gly Thr \*  
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 Ile Tyr Val Ser Ser Trp Ala Val Gln Val Ser Gln Gly Asn Arg Glu  
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 Val Glu Arg Leu Ala Arg Lys Phe Gly Phe Val Asn Leu Gly Pro Ile  
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 Phe Pro Asp Gly Gln Tyr Phe His Leu Arg His Arg Gly Val Val Gln  
 65 70 75 80  
 Gln Ser Leu Thr Pro His Trp Gly His Arg Leu His Leu Lys Lys Asn  
 85 90 95  
 Pro Lys Val Gln Trp Phe Gln Gln Gln Thr Leu Gln Arg Arg Val Lys  
 100 105 110  
 Arg Ser Val Val Val Pro Thr Asp Pro Trp Phe Ser Lys Gln Trp Tyr





Asp	Gly	Pro	Ala	Tyr	Ile	Leu	Gly	Gln	Leu	Cys	Leu	Ala	Tyr	Cys	Pro
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Pro	Arg	Phe	Phe	Asn	His	Thr	Arg	Leu	Val	Thr	Ala	Gly	Pro	Gly	His
625					630					635					640
Thr	Ala	Ala	Pro	Ala	Leu	Arg	Val	Cys	Ser	Ser	Cys	His	Ala	Ser	Cys
				645					650					655	
Tyr	Thr	Cys	Arg	Gly	Gly	Ser	Pro	Arg	Asp	Cys	Thr	Ser	Cys	Pro	Pro
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Ser	Ser	Thr	Leu	Asp	Gln	Gln	Gln	Gly	Ser	Cys	Met	Gly	Pro	Thr	Thr
		675					680					685			
Pro	Asp	Ser	Arg	Pro	Arg	Leu	Arg	Ala	Ala	Ala	Cys	Pro	His	His	Arg
	690					695					700				
Cys	Pro	Ala	Ser	Ala	Met	Val	Leu	Ser	Leu	Leu	Ala	Val	Thr	Leu	Gly
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Gly	Pro	Val	Leu	Cys	Gly	Met	Ser	Met	Asp	Leu	Pro	Leu	Tyr	Ala	Trp
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Leu	Ser	Arg	Ala	Arg	Ala	Thr	Pro	Thr	Lys	Pro	Gln	Val	Trp	Leu	Pro
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cct att gaa gat gaa cag act cca att cat ata tca tgg cta tct ttg 153  
 Pro Ile Glu Asp Glu Gln Thr Pro Ile His Ile Ser Trp Leu Ser Leu  
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 Ser Arg Val Asn Cys Ser Gln Phe Leu Gly Leu Cys Ala Leu Pro Gly  
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 Cys Lys Phe Lys Asp Val Arg Arg Asn Val Gln Lys Asp Thr Glu Glu  
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cta aag agc tgt ggt ata caa gac ata ttt gtt ttc tgc acc aga ggg 297  
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gaa ctg tca aaa tat aga gtc cca aac ctt ctg gat ctc tac cag caa 345  
 Glu Leu Ser Lys Tyr Arg Val Pro Asn Leu Leu Asp Leu Tyr Gln Gln  
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tgt gga att atc acc cat cat cat cca atc gca gat gga ggg act cct 393

Cys	Gly	Ile	Ile	Thr	His	His	His	Pro	Ile	Ala	Asp	Gly	Gly	Thr	Pro		
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gac	ata	gcc	agc	tgc	tgt	gaa	ata	atg	gaa	gag	ctt	aca	acc	tgc	ctt	441	
Asp	Ile	Ala	Ser	Cys	Cys	Glu	Ile	Met	Glu	Glu	Leu	Thr	Thr	Cys	Leu		
115					120				125						130		
aaa	aat	tac	cga	aaa	acc	tta	ata	cac	tgc	tat	gga	gga	ctt	ggg	aga	489	
Lys	Asn	Tyr	Arg	Lys	Thr	Leu	Ile	His	Cys	Tyr	Gly	Gly	Leu	Gly	Arg		
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tct	tgt	ctt	gta	gct	gct	tgt	ctc	cta	cta	tac	ctg	tct	gac	aca	ata	537	
Ser	Cys	Leu	Val	Ala	Ala	Cys	Leu	Leu	Leu	Tyr	Leu	Ser	Asp	Thr	Ile		
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tca	cca	gag	caa	gcc	ata	gac	agc	ctg	cga	gac	cta	aga	gga	tcc	ggg	585	
Ser	Pro	Glu	Gln	Ala	Ile	Asp	Ser	Leu	Arg	Asp	Leu	Arg	Gly	Ser	Gly		
		165					170					175					
gca	ata	cag	acc	atc	aag	caa	tac	aat	tat	ctt	cat	gag	ttt	cgg	gac	633	
Ala	Ile	Gln	Thr	Ile	Lys	Gln	Tyr	Asn	Tyr	Leu	His	Glu	Phe	Arg	Asp		
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aaa	tta	gct	gca	cat	cta	tca	tca	aga	gat	tca	caa	tca	aga	tct	gta	681	
Lys	Leu	Ala	Ala	His	Leu	Ser	Ser	Arg	Asp	Ser	Gln	Ser	Arg	Ser	Val		
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tca	aga	taa	aggaattcaa	atagcatata	tatgaccatg	tctgaaatgt										730	
Ser	Arg	*															

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 <213> Homo sapiens

<400> 68																	
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		20						25					30				
Ser	Leu	Ser	Arg	Val	Asn	Cys	Ser	Gln	Phe	Leu	Gly	Leu	Cys	Ala	Leu		
		35					40					45					
Pro	Gly	Cys	Lys	Phe	Lys	Asp	Val	Arg	Arg	Asn	Val	Gln	Lys	Asp	Thr		
	50				55					60							
Glu	Glu	Leu	Lys	Ser	Cys	Gly	Ile	Gln	Asp	Ile	Phe	Val	Phe	Cys	Thr		
65				70					75					80			
Arg	Gly	Glu	Leu	Ser	Lys	Tyr	Arg	Val	Pro	Asn	Leu	Leu	Asp	Leu	Tyr		
				85					90					95			
Gln	Gln	Cys	Gly	Ile	Ile	Thr	His	His	His	Pro	Ile	Ala	Asp	Gly	Gly		
		100					105						110				
Thr	Pro	Asp	Ile	Ala	Ser	Cys	Cys	Glu	Ile	Met	Glu	Glu	Leu	Thr	Thr		
		115				120						125					
Cys	Leu	Lys	Asn	Tyr	Arg	Lys	Thr	Leu	Ile	His	Cys	Tyr	Gly	Gly	Leu		
	130					135					140						
Gly	Arg	Ser	Cys	Leu	Val	Ala	Ala	Cys	Leu	Leu	Leu	Tyr	Leu	Ser	Asp		
145				150					155					160			
Thr	Ile	Ser	Pro	Glu	Gln	Ala	Ile	Asp	Ser	Leu	Arg	Asp	Leu	Arg	Gly		



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aaa tct gat tat ata atc agg act cta	aaa gtt aag ttc aat agt gaa	584					
Lys Ser Asp Tyr Ile Ile Arg Thr Leu	Lys Val Lys Phe Asn Ser Glu						
	170 175 180						
act cga act atc tac cag ttt cat tac	aag aat tgg cca gac cat gat	632					
Thr Arg Thr Ile Tyr Gln Phe His Tyr	Lys Asn Trp Pro Asp His Asp						
	185 190 195						
gta cct tca tct ata gac cct att ctt	gag ctc atc tgg gat gta cgt	680					
Val Pro Ser Ser Ile Asp Pro Ile Leu	Glu Leu Ile Trp Asp Val Arg						
	200 205 210						
tgt tac caa gag gat gac agt gtt ccc	ata tgc att cac tgc agt gct	728					
Cys Tyr Gln Glu Asp Asp Ser Val Pro	Ile Cys Ile His Cys Ser Ala						
	215 220 225						
ggc tgt gga agg act ggt gtt att tgt	gct att gtt gat tat aca tgg	776					
Gly Cys Gly Arg Thr Gly Val Ile Cys	Ala Ile Val Asp Tyr Thr Trp						
	230 235 240 245						
atg ttg cta aaa gat ggg ata att cct	gag aac ttc agt gtt ttc agt	824					
Met Leu Leu Lys Asp Gly Ile Ile Pro	Glu Asn Phe Ser Val Phe Ser						
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ttg atc cgg gaa atg cgg aca cag agg	cct tca tta gtt caa acg cag	872					
Leu Ile Arg Glu Met Arg Thr Gln Arg	Pro Ser Leu Val Gln Thr Gln						
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gaa caa tat gaa ctg gtc tac aat gct	gta tta gaa cta ttt aag aga	920					
Glu Gln Tyr Glu Leu Val Tyr Asn Ala	Val Leu Glu Leu Phe Lys Arg						
	280 285 290						
cag atg gat gtt atc aga gat aaa cat	tct gga aca gag agt caa gca	968					
Gln Met Asp Val Ile Arg Asp Lys His	Ser Gly Thr Glu Ser Gln Ala						
	295 300 305						
aag cat tgt att cct gag aaa aat cac	act ctc caa gca gac tct tat	1016					
Lys His Cys Ile Pro Glu Lys Asn His	Thr Leu Gln Ala Asp Ser Tyr						
	310 315 320 325						
tct cct aat tta cca aaa agt acc aca	aaa gca gca aaa atg atg aac	1064					
Ser Pro Asn Leu Pro Lys Ser Thr Thr	Lys Ala Ala Lys Met Met Asn						
	330 335 340						
caa caa agg aca aaa atg gaa atc aaa	gaa tct tct tcc ttt gac ttt	1112					
Gln Gln Arg Thr Lys Met Glu Ile Lys	Glu Ser Ser Ser Phe Asp Phe						
	345 350 355						
agg act tct gaa ata agt gca aaa gaa	gag cta gtt ttg cac cct gct	1160					
Arg Thr Ser Glu Ile Ser Ala Lys Glu	Glu Leu Val Leu His Pro Ala						
	360 365 370						
aaa tca agc act tct ttt gac ttt ctg	gag cta aat tac agt ttt gac	1208					
Lys Ser Ser Thr Ser Phe Asp Phe Leu	Glu Leu Asn Tyr Ser Phe Asp						
	375 380 385						
aaa aat gct gac aca acc atg aaa tgg	cag aca aag gca ttt cca ata	1256					
Lys Asn Ala Asp Thr Thr Met Lys Trp	Gln Thr Lys Ala Phe Pro Ile						
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Val Gly Glu Pro Leu Gln Lys His Gln Ser Leu Asp Leu Gly Ser Leu	
410 415 420	
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Leu Phe Glu Gly Cys Ser Asn Ser Lys Pro Val Asn Ala Ala Gly Arg	
425 430 435	
tat ttt aat tca aag gtg cca ata aca cgg acc aaa tca act cct ttt	1400
Tyr Phe Asn Ser Lys Val Pro Ile Thr Arg Thr Lys Ser Thr Pro Phe	
440 445 450	
gaa ttg ata cag cag aga gaa acc aag gag gtg gac agc aag gaa aac	1448
Glu Leu Ile Gln Gln Arg Gln Thr Lys Glu Val Asp Ser Lys Glu Asn	
455 460 465	
ttt tct tat ttg gaa tct caa cca cat gat tct tgt ttt gta gag atg	1496
Phe Ser Tyr Leu Glu Ser Gln Pro His Asp Ser Cys Phe Val Glu Met	
470 475 480 485	
cag gct caa aaa gta atg cat gtt tct tca gca gaa ctg aat tat tca	1544
Gln Ala Gln Lys Val Met His Val Ser Ser Ala Glu Leu Asn Tyr Ser	
490 495 500	
ctg cca tat gac tct aaa cac caa ata cgt aat gcc tct aat gta aag	1592
Leu Pro Tyr Asp Ser Lys His Gln Ile Arg Asn Ala Ser Asn Val Lys	
505 510 515	
cac cat gac tct agt gct ctt ggt gta tat tct tac ata cct tta gtg	1640
His His Asp Ser Ser Ala Leu Gly Val Tyr Ser Tyr Ile Pro Leu Val	
520 525 530	
gaa aat cct tat ttt tca tca tgg cct cca agt ggt acc agt tct aag	1688
Glu Asn Pro Tyr Phe Ser Ser Trp Pro Pro Ser Gly Thr Ser Ser Lys	
535 540 545	
atg tct ctt gat tta cct gag aag caa gat gga act gtt ttt cct tct	1736
Met Ser Leu Asp Leu Pro Glu Lys Gln Asp Gly Thr Val Phe Pro Ser	
550 555 560 565	
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Ser Leu Leu Pro Thr Ser Ser Thr Ser Leu Phe Ser Tyr Tyr Asn Ser	
570 575 580	
cat gat tct tta tca ctg aat tct cca acc aat att tcc tca cta ttg	1832
His Asp Ser Leu Ser Leu Asn Ser Pro Thr Asn Ile Ser Ser Leu Leu	
585 590 595	
aac cag gag tca gct gta cta gca act gct cca agg ata gat gat gaa	1880
Asn Gln Glu Ser Ala Val Leu Ala Thr Ala Pro Arg Ile Asp Asp Glu	
600 605 610	
atc ccc cct cca ctt cct gta cgg aca cct gaa tca ttt att gtg gtt	1928
Ile Pro Pro Pro Leu Pro Val Arg Thr Pro Glu Ser Phe Ile Val Val	
615 620 625	
gag gaa gct gga gaa ttc tca cca aat gtt ccc aaa tcc tta tcc tca	1976
Glu Glu Ala Gly Glu Phe Ser Pro Asn Val Pro Lys Ser Leu Ser Ser	
630 635 640 645	

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Ala Val Lys Val Lys Ile Gly Thr Ser Leu Glu Trp Gly Gly Thr Ser  
650 655 660  
gaa cca aag aaa ttt gat gac tct gtg ata ctt aga cca agc aag agt 2072  
Glu Pro Lys Lys Phe Asp Asp Ser Val Ile Leu Arg Pro Ser Lys Ser  
665 670 675  
gta aaa ctc cga agt cct aaa tca gaa cta cat caa gat cgt tct tct 2120  
Val Lys Leu Arg Ser Pro Lys Ser Glu Leu His Gln Asp Arg Ser Ser  
680 685 690  
ccc cca cct cct ctc cca gaa aga act cta gag tcc ttc ttt ctt gcc 2168  
Pro Pro Pro Pro Leu Pro Glu Arg Thr Leu Glu Ser Phe Phe Leu Ala  
695 700 705  
gat gaa gat tgt atg cag gcc caa tct ata gaa aca tat tct act agc 2216  
Asp Glu Asp Cys Met Gln Ala Gln Ser Ile Glu Thr Tyr Ser Thr Ser  
710 715 720 725  
tat cct gac acc atg gaa aat tca aca tct tca aaa cag aca ctg aag 2264  
Tyr Pro Asp Thr Met Glu Asn Ser Thr Ser Ser Lys Gln Thr Leu Lys  
730 735 740  
act cct gga aaa agt ttc aca agg agt aag agt ttg aaa att ttg cga 2312  
Thr Pro Gly Lys Ser Phe Thr Arg Ser Lys Ser Leu Lys Ile Leu Arg  
745 750 755  
aac atg aaa aag agt atc tgt aat tct tgc cca cca aac aag cct gca 2360  
Asn Met Lys Lys Ser Ile Cys Asn Ser Cys Pro Pro Asn Lys Pro Ala  
760 765 770  
gaa tct gtt cag tca aat aac tcc agc tca ttt ctg aat ttt ggt ttt 2408  
Glu Ser Val Gln Ser Asn Asn Ser Ser Ser Phe Leu Asn Phe Gly Phe  
775 780 785  
gca aac cgt ttt tca aaa ccc aaa gga cca agg aat cca cca cca act 2456  
Ala Asn Arg Phe Ser Lys Pro Lys Gly Pro Arg Asn Pro Pro Pro Thr  
790 795 800 805  
tgg aat att taa taaaactcag atttataata atatgggctg caagtacacc 2508  
Trp Asn Ile \*

tgcaaataaaa actactagaa tactgctagt taaaataagt gctctatatg cataatatga 2568  
agatatgcta atgtgttaaat agcttttataa agaaaaagcaa aatgcccaata agtgccagtt 2628  
ttgcattttc atatcatttg cattgagttg aaaactgcaa ataaaagttt gtcacttgag 2688  
cttatgtaca gaatgctata tgagaaacac ttttagaatg gatttatttt tcatttttgc 2748  
cagttatttt tattttcttt tacttttcta cataaacata aacttcaaaa ggtttgtaag 2808  
atttgatct caactaattt ctacattgcc agaataact ataaaaagtt aaaaaaaaaa 2868  
acttactttg tgggttgcaa tacaaactgc tcttgacaat gactattccc tgacagttat 2928  
ttttgcctaa atggagtata ccttgtaaat cttcccaaat gttgtggaaa actggaatat 2988  
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<210> 70  
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<212> PRT  
<213> Homo sapiens

<400> 70

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			20					25					30		
Arg	Gln	Ser	Thr	Lys	Tyr	Lys	Ala	Asp	Lys	Thr	Tyr	Pro	Thr	Thr	Val
		35					40					45			
Ala	Glu	Asn	Ala	Lys	Asn	Ile	Lys	Lys	Asn	Arg	Tyr	Lys	Asp	Ile	Leu
50					55					60					
Pro	Tyr	Asp	Tyr	Ser	Arg	Val	Glu	Leu	Ser	Leu	Ile	Thr	Ser	Asp	Glu
65					70					75				80	
Asp	Ser	Ser	Tyr	Ile	Asn	Ala	Asn	Phe	Ile	Lys	Gly	Val	Tyr	Gly	Pro
			85					90						95	
Lys	Ala	Tyr	Ile	Ala	Thr	Gln	Gly	Pro	Leu	Ser	Thr	Thr	Leu	Leu	Asp
			100					105					110		
Phe	Trp	Arg	Met	Ile	Trp	Glu	Tyr	Ser	Val	Leu	Ile	Ile	Val	Met	Ala
		115					120					125			
Cys	Met	Glu	Tyr	Glu	Met	Gly	Lys	Lys	Lys	Cys	Glu	Arg	Tyr	Trp	Ala
130						135					140				
Glu	Pro	Gly	Glu	Met	Gln	Leu	Glu	Phe	Gly	Pro	Phe	Ser	Val	Ser	Cys
145					150					155					160
Glu	Ala	Glu	Lys	Arg	Lys	Ser	Asp	Tyr	Ile	Ile	Arg	Thr	Leu	Lys	Val
			165						170					175	
Lys	Phe	Asn	Ser	Glu	Thr	Arg	Thr	Ile	Tyr	Gln	Phe	His	Tyr	Lys	Asn
			180					185					190		
Trp	Pro	Asp	His	Asp	Val	Pro	Ser	Ser	Ile	Asp	Pro	Ile	Leu	Glu	Leu
		195					200					205			
Ile	Trp	Asp	Val	Arg	Cys	Tyr	Gln	Glu	Asp	Asp	Ser	Val	Pro	Ile	Cys
		210				215					220				
Ile	His	Cys	Ser	Ala	Gly	Cys	Gly	Arg	Thr	Gly	Val	Ile	Cys	Ala	Ile
225					230					235					240
Val	Asp	Tyr	Thr	Trp	Met	Leu	Leu	Lys	Asp	Gly	Ile	Ile	Pro	Glu	Asn
			245						250					255	
Phe	Ser	Val	Phe	Ser	Leu	Ile	Arg	Glu	Met	Arg	Thr	Gln	Arg	Pro	Ser
			260					265					270		
Leu	Val	Gln	Thr	Gln	Glu	Gln	Tyr	Glu	Leu	Val	Tyr	Asn	Ala	Val	Leu
			275				280					285			
Glu	Leu	Phe	Lys	Arg	Gln	Met	Asp	Val	Ile	Arg	Asp	Lys	His	Ser	Gly
290						295					300				
Thr	Glu	Ser	Gln	Ala	Lys	His	Cys	Ile	Pro	Glu	Lys	Asn	His	Thr	Leu
305					310					315					320
Gln	Ala	Asp	Ser	Tyr	Ser	Pro	Asn	Leu	Pro	Lys	Ser	Thr	Thr	Lys	Ala
			325						330					335	
Ala	Lys	Met	Met	Asn	Gln	Gln	Arg	Thr	Lys	Met	Glu	Ile	Lys	Glu	Ser
			340					345					350		
Ser	Ser	Phe	Asp	Phe	Arg	Thr	Ser	Glu	Ile	Ser	Ala	Lys	Glu	Glu	Leu
		355					360					365			
Val	Leu	His	Pro	Ala	Lys	Ser	Ser	Thr	Ser	Phe	Asp	Phe	Leu	Glu	Leu
			370			375					380				
Asn	Tyr	Ser	Phe	Asp	Lys	Asn	Ala	Asp	Thr	Thr	Met	Lys	Trp	Gln	Thr
385					390					395					400
Lys	Ala	Phe	Pro	Ile	Val	Gly	Glu	Pro	Leu	Gln	Lys	His	Gln	Ser	Leu
			405						410					415	
Asp	Leu	Gly	Ser	Leu	Leu	Phe	Glu	Gly	Cys	Ser	Asn	Ser	Lys	Pro	Val
			420					425					430		
Asn	Ala	Ala	Gly	Arg	Tyr	Phe	Asn	Ser	Lys	Val	Pro	Ile	Thr	Arg	Thr
		435					440					445			
Lys	Ser	Thr	Pro	Phe	Glu	Leu	Ile	Gln	Gln	Arg	Glu	Thr	Lys	Glu	Val
		450				455					460				
Asp	Ser	Lys	Glu	Asn	Phe	Ser	Tyr	Leu	Glu	Ser	Gln	Pro	His	Asp	Ser
465					470					475					480
Cys	Phe	Val	Glu	Met	Gln	Ala	Gln	Lys	Val	Met	His	Val	Ser	Ser	Ala





gct ttt ggc agc atg aaa gtt agc aga gac aag gac ggc agc aag gtg	150
Ala Phe Gly Ser Met Lys Val Ser Arg Asp Lys Asp Gly Ser Lys Val	
25 30 35	
aca aca gtg gtg gca act cct ggg cag ggt cca gac agg cca caa gaa	198
Thr Thr Val Val Ala Thr Pro Gly Gln Gly Pro Asp Arg Pro Gln Glu	
40 45 50	
gtc agc tat aca gac act aaa gtg att gga aat gga tca ttt ggt gtg	246
Val Ser Tyr Thr Asp Thr Lys Val Ile Gly Asn Gly Ser Phe Gly Val	
55 60 65	
gta tat caa gcc aaa ctt tgt gat tca gga gaa ctg gtc gcc atc aag	294
Val Tyr Gln Ala Lys Leu Cys Asp Ser Gly Glu Leu Val Ala Ile Lys	
70 75 80 85	
aaa gta ttg cag gac aag aga ttt aag aat cga gag ctg cag atc atg	342
Lys Val Leu Gln Asp Lys Arg Phe Lys Asn Arg Glu Leu Gln Ile Met	
90 95 100	
aga aag cta gat cac tgt aac ata gtc cga ttg cgt tat ttc ttc tac	390
Arg Lys Leu Asp His Cys Asn Ile Val Arg Leu Arg Tyr Phe Phe Tyr	
105 110 115	
tcc agt ggt gag aag aaa gat gag gtc tat ctt aat ctg gtg ctg gac	438
Ser Ser Gly Glu Lys Lys Asp Glu Val Tyr Leu Asn Leu Val Leu Asp	
120 125 130	
tat gtt ccg gaa aca gta tac aga gtt gcc aga cac tat agt cga gcc	486
Tyr Val Pro Glu Thr Val Tyr Arg Val Ala Arg His Tyr Ser Arg Ala	
135 140 145	
aaa cag acg ctg cct gtg att tat gtc aag ttg tat atg tat cag ctg	534
Lys Gln Thr Leu Pro Val Ile Tyr Val Lys Leu Tyr Met Tyr Gln Leu	
150 155 160 165	
ttc cga agt tta gcc tat atc cat tcc ttt gga atc tgc cat cgg gat	582
Phe Arg Ser Leu Ala Tyr Ile His Ser Phe Gly Ile Cys His Arg Asp	
170 175 180	
att aaa ccg cag aac ctg ttg ttg gat cct gat act gct gta tta aaa	630
Ile Lys Pro Gln Asn Leu Leu Leu Asp Pro Asp Thr Ala Val Leu Lys	
185 190 195	
ctc tgt gac ttt gga agt gca aag cag ctg gtc cga gga gaa ccc aat	678
Leu Cys Asp Phe Gly Ser Ala Lys Gln Leu Val Arg Gly Glu Pro Asn	
200 205 210	
gtt tcg tat atc tgt tct cgg tac tat agg gca cca gag ttg atc ttt	726
Val Ser Tyr Ile Cys Ser Arg Tyr Tyr Arg Ala Pro Glu Leu Ile Phe	
215 220 225	
gga gcc act gat tat acc tct agt ata gat gta tgg tct gct ggc tgt	774
Gly Ala Thr Asp Tyr Thr Ser Ser Ile Asp Val Trp Ser Ala Gly Cys	
230 235 240 245	
gtg ttg gct gag ctg tta cta gga caa cca ata ttt cca ggg gat agt	822
Val Leu Ala Glu Leu Leu Leu Gly Gln Pro Ile Phe Pro Gly Asp Ser	
250 255 260	
ggt gtg gat cag ttg gta gaa ata atc aag gtc ctg gga act cca aca	870

Gly	Val	Asp	Gln	Leu	Val	Glu	Ile	Ile	Lys	Val	Leu	Gly	Thr	Pro	Thr		
			265					270					275				
agg	gag	caa	atc	aga	gaa	atg	aac	cca	aac	tac	aca	gaa	ttt	aaa	ttc	918	
Arg	Glu	Gln	Ile	Arg	Glu	Met	Asn	Pro	Asn	Tyr	Thr	Glu	Phe	Lys	Phe		
		280					285					290					
cct	caa	att	aag	gca	cat	cct	tgg	act	aag	gtc	ttc	cga	ccc	cga	act	966	
Pro	Gln	Ile	Lys	Ala	His	Pro	Trp	Thr	Lys	Val	Phe	Arg	Pro	Arg	Thr		
	295					300					305						
cca	ccg	gag	gca	att	gca	ctg	tgt	agc	cgt	ctg	ctg	gag	tat	aca	cca	1014	
Pro	Pro	Glu	Ala	Ile	Ala	Leu	Cys	Ser	Arg	Leu	Leu	Glu	Tyr	Thr	Pro		
310					315					320					325		
act	gcc	cga	cta	aca	cca	ctg	gaa	gct	tgt	gca	cat	tca	ttt	ttt	gat	1062	
Thr	Ala	Arg	Leu	Thr	Pro	Leu	Glu	Ala	Cys	Ala	His	Ser	Phe	Phe	Asp		
				330					335					340			
gaa	tta	cgg	gac	cca	aat	gtc	aaa	cat	cca	aat	ggg	cga	gac	aca	cct	1110	
Glu	Leu	Arg	Asp	Pro	Asn	Val	Lys	His	Pro	Asn	Gly	Arg	Asp	Thr	Pro		
			345					350					355				
gca	ctc	ttc	aac	ttc	acc	act	caa	gaa	ctg	tca	agt	aat	cca	cct	ctg	1158	
Ala	Leu	Phe	Asn	Phe	Thr	Thr	Gln	Glu	Leu	Ser	Ser	Asn	Pro	Pro	Leu		
		360					365					370					
gct	acc	atc	ctt	att	cct	cct	cat	gct	cgg	att	caa	gca	gct	gct	tca	1206	
Ala	Thr	Ile	Leu	Ile	Pro	Pro	His	Ala	Arg	Ile	Gln	Ala	Ala	Ala	Ser		
	375					380					385						
acc	ccc	aca	aat	gcc	aca	gca	gcg	tca	gat	gct	aat	act	gga	gac	cgt	1254	
Thr	Pro	Thr	Asn	Ala	Thr	Ala	Ala	Ser	Asp	Ala	Asn	Thr	Gly	Asp	Arg		
390				395					400						405		
gga	cag	acc	aat	aat	gct	gct	tct	gca	tca	gct	tcc	aac	tcc	acc	tga	1302	
Gly	Gln	Thr	Asn	Asn	Ala	Ala	Ser	Ala	Ser	Ala	Ser	Asn	Ser	Thr	*		
			410					415					420				
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<210> 72  
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 <213> Homo sapiens

<400> 72

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			20					25					30				
Asp	Gly	Ser	Lys	Val	Thr	Thr	Val	Val	Ala	Thr	Pro	Gly	Gln	Gly	Pro		
	35					40					45						
Asp	Arg	Pro	Gln	Glu	Val	Ser	Tyr	Thr	Asp	Thr	Lys	Val	Ile	Gly	Asn		
	50					55				60							
Gly	Ser	Phe	Gly	Val	Val	Tyr	Gln	Ala	Lys	Leu	Cys	Asp	Ser	Gly	Glu		
65				70					75					80			
Leu	Val	Ala	Ile	Lys	Lys	Val	Leu	Gln	Asp	Lys	Arg	Phe	Lys	Asn	Arg		
			85					90					95				
Glu	Leu	Gln	Ile	Met	Arg	Lys	Leu	Asp	His	Cys	Asn	Ile	Val	Arg	Leu		



ccc tac ggc ttc tcc gcc atg caa ggc tgg cgc gtc tcc atg gag gat	147
Pro Tyr Gly Phe Ser Ala Met Gln Gly Trp Arg Val Ser Met Glu Asp	
30 35 40	
gct cac aac tgt att cct gag ctg gac agt gag aca gcc atg ttt tct	195
Ala His Asn Cys Ile Pro Glu Leu Asp Ser Glu Thr Ala Met Phe Ser	
45 50 55	
gtc tac gat gga cat gga ggg gag gaa gtt gcc ttg tac tgt gcc aaa	243
Val Tyr Asp Gly His Gly Gly Glu Glu Val Ala Leu Tyr Cys Ala Lys	
60 65 70	
tat ctt cct gat atc atc aaa gat cag aag gcc tac aag gaa ggc aag	291
Tyr Leu Pro Asp Ile Ile Lys Asp Gln Lys Ala Tyr Lys Glu Gly Lys	
75 80 85	
cta cag aag gct tta gaa gat gcc ttc ttg gct att gac gcc aaa ttg	339
Leu Gln Lys Ala Leu Glu Asp Ala Phe Leu Ala Ile Asp Ala Lys Leu	
90 95 100 105	
acc act gaa gaa gtc att aaa gag ctg gca cag att gca ggg cga ccc	387
Thr Thr Glu Glu Val Ile Lys Glu Leu Ala Gln Ile Ala Gly Arg Pro	
110 115 120	
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His Ser Lys Ser Gly Gly Gly Thr Gly Glu Glu Pro Gly Ser Gln Gly	
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Leu Asn Gly Glu Ala Gly Pro Glu Asp Ser Thr Arg Glu Thr Pro Ser	
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Ser	Ile	Val	Glu	Glu	Leu	Leu	Asp	Gln	Cys	Leu	Ala	Pro	Asp	Thr	Ser	
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Ala	Phe	Leu	Ala	Ile	Asp	Ala	Lys	Leu	Thr	Thr	Glu	Glu	Val	Ile	Lys					
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Glu	Lys	Val	Ala	Asp	Glu	Asp	Val	Asp	Asn	Glu	Glu	Ala	Ala	Leu						
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Leu	His	Glu	Glu	Ala	Thr	Met	Thr	Ile	Glu	Glu	Leu	Leu	Thr	Arg	Tyr					
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Lys	Ala	Tyr	Thr	Gly	Phe	Ser	Ser	Asn	Ser	Glu	Arg	Gly	Thr	Glu	Ala					
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Cys	Ser	Ser	Ala	Ser	Asp	Lys	Leu	Pro	Arg	Val	Ala	Lys	Ser	Lys	Phe					
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Arg Thr Thr Pro Met Asp Ser Thr Gly Val Pro His Ile Leu Glu His				
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Thr Val Leu Cys Gly Ser Gln Lys Tyr Pro Cys Arg Asn Pro Phe Phe				
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Ser Phe Ala Thr Asp Pro Ser Lys Gln Thr Thr Val Ser Val Ser Phe	
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Pro Val Glu Leu Leu Lys Leu Gly Asn Gln Leu Ala Lys Phe Arg Gln	
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Ile	Leu	Gly	Pro	Glu	Asn	Pro	Lys	Ile	Ala	Lys	Asp	Pro	Ser	Trp	Ile		

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1025                                1030                                1035
atc cga tga gcagccgtgg cgctcgactg cacaggagcc cgagacaata 3170
Ile Arg *

cacctccaag ctgaatatga aaagtcagaa atgctactgc tttttccaag aatattatgt 3230
cattgagtgt cgccaaagcc cttgactggc gagtcaaaaa ctcagatcta tcttaagagt 3290
gaccaggaag aggttcattg aaataatcat gcatgaagcg ccaaagatgc accatgtaga 3350
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aataaagggc aactctgact ta 3432

<210> 76
<211> 1038
<212> PRT
<213> Homo sapiens

<220>
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<223> Xaa = Cys, Arg, Ser or Gly

<400> 76
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Ser Gly Gly His Ala His His Arg Ala Trp Arg Trp Asn Ser Asn Arg
 20          25          30
Ala Cys Glu Arg Ala Leu Gln Tyr Lys Leu Gly Asp Lys Ile His Gly
 35          40          45
Phe Thr Val Asn Gln Val Thr Ser Val Pro Glu Leu Phe Leu Thr Ala
 50          55          60
Val Lys Leu Thr His Asp Asp Thr Gly Ala Arg Tyr Leu His Leu Ala
 65          70          75          80
Arg Glu Asp Thr Asn Asn Leu Phe Ser Val Gln Phe Arg Thr Thr Pro
 85          90          95
Met Asp Ser Thr Gly Val Pro His Ile Leu Glu His Thr Val Leu Cys
100          105          110
Gly Ser Gln Lys Tyr Pro Cys Arg Asn Pro Phe Phe Lys Met Leu Asn
115          120          125
Arg Ser Leu Ser Thr Phe Met Asn Ala Phe Thr Ala Ser Asp Tyr Thr
130          135          140
Leu Tyr Pro Phe Ser Thr Gln Asn Pro Lys Asp Phe Gln Asn Leu Leu
145          150          155          160
Ser Val Tyr Leu Asp Ala Thr Phe Ser Pro Cys Leu Arg Glu Leu Asp
165          170          175
Phe Trp Gln Glu Gly Trp Arg Leu Glu His Glu Asn Pro Ser Asp Pro
180          185          190
Gln Thr Pro Leu Val Phe Lys Gly Val Val Phe Asn Glu Met Lys Gly
195          200          205          210
Ala Phe Thr Asp Asn Glu Arg Ile Phe Ser Gln His Leu Gln Asn Arg
215          220
Leu Leu Pro Asp His Thr Tyr Ser Val Val Ser Gly Gly Asp Pro Leu
225          230          235          240
Cys Ile Pro Glu Leu Thr Trp Glu Gln Leu Lys Gln Phe His Ala Thr
245          250          255
His Tyr His Pro Ser Asn Ala Arg Phe Phe Thr Tyr Gly Asn Phe Pro
260          265          270
Leu Glu Gln His Leu Lys Gln Ile His Glu Glu Ala Leu Ser Lys Phe
275          280          285
Gln Lys Ile Glu Pro Ser Thr Val Val Pro Ala Gln Thr Pro Trp Asp
290          295          300
Lys Pro Arg Glu Phe Gln Ile Thr Cys Gly Pro Asp Ser Phe Ala Thr

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305	Asp	Pro	Ser	Lys	Gln	Thr	Thr	Val	Ser	Val	Ser	Phe	Leu	Leu	Pro	Asp	320
					325					330						335	
Ile	Thr	Asp	Thr	Phe	Glu	Ala	Phe	Thr	Leu	Ser	Leu	Leu	Ser	Ser	Leu		
			340					345					350				
Leu	Thr	Ser	Gly	Pro	Asn	Ser	Pro	Phe	Tyr	Lys	Ala	Leu	Ile	Glu	Ser		
		355					360					365					
Gly	Leu	Gly	Thr	Glu	Phe	Ser	Pro	Asp	Val	Gly	Tyr	Asn	Gly	Tyr	Thr		
	370					375				380							
Arg	Glu	Ala	Tyr	Phe	Ser	Val	Gly	Leu	Gln	Gly	Ile	Val	Glu	Lys	Asp		
385					390				395						400		
Ile	Glu	Thr	Val	Arg	Ser	Leu	Ile	Asp	Arg	Thr	Ile	Asp	Glu	Val	Val		
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Glu	Thr	Arg	Ile	Glu	Asp	Asp	Arg	Ile	Glu	Ala	Leu	Leu	His	Lys	Ile		
			420					425					430				
Glu	Ile	Gln	Met	Lys	His	Gln	Ser	Thr	Ser	Phe	Gly	Leu	Met	Leu	Thr		
	435						440					445					
Ser	Tyr	Ile	Ala	Ser	Cys	Trp	Asn	His	Asp	Gly	Asp	Pro	Val	Glu	Leu		
	450					455				460							
Leu	Lys	Leu	Gly	Asn	Gln	Leu	Ala	Lys	Phe	Arg	Gln	Cys	Leu	Gln	Glu		
465					470					475					480		
Asn	Pro	Lys	Phe	Leu	Gln	Glu	Lys	Val	Lys	Gln	Tyr	Phe	Lys	Asn	Asn		
				485					490					495			
Gln	His	Lys	Leu	Thr	Leu	Ser	Met	Arg	Pro	Asp	Asp	Lys	Tyr	His	Glu		
	500							505					510				
Lys	Gln	Ala	Gln	Val	Glu	Ala	Thr	Lys	Leu	Lys	Gln	Lys	Val	Glu	Ala		
	515						520					525					
Leu	Ser	Pro	Gly	Asp	Arg	Gln	Gln	Ile	Tyr	Glu	Lys	Gly	Leu	Glu	Leu		
	530					535					540						
Arg	Ser	Gln	Gln	Ser	Lys	Pro	Gln	Asp	Ala	Ser	Cys	Leu	Pro	Ala	Leu		
545					550				555						560		
Lys	Val	Ser	Asp	Ile	Glu	Pro	Thr	Ile	Pro	Val	Thr	Glu	Leu	Asp	Val		
				565					570					575			
Val	Leu	Thr	Ala	Gly	Asp	Ile	Pro	Val	Gln	Tyr	Cys	Ala	Gln	Pro	Thr		
			580					585					590				
Asn	Gly	Met	Val	Tyr	Phe	Arg	Ala	Phe	Ser	Ser	Leu	Asn	Thr	Leu	Pro		
	595						600					605					
Glu	Glu	Leu	Arg	Pro	Tyr	Val	Pro	Leu	Phe	Cys	Ser	Ile	Leu	Thr	Lys		
	610					615					620						
Leu	Gly	Cys	Gly	Leu	Leu	Asp	Tyr	Arg	Glu	Gln	Ala	Gln	Gln	Ile	Glu		
625					630				635					640			
Leu	Lys	Thr	Gly	Gly	Met	Ser	Ala	Ser	Pro	His	Val	Leu	Pro	Asp	Asp		
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Ser	His	Met	Asp	Thr	Tyr	Glu	Gln	Val	Gly	Val	Leu	Phe	Ser	Ser	Leu		
			660					665					670				
Cys	Leu	Asp	Arg	Asn	Leu	Pro	Asp	Met	Met	Gln	Leu	Trp	Ser	Glu	Ile		
	675						680					685					
Phe	Asn	Asn	Pro	Cys	Phe	Glu	Glu	Glu	Glu	His	Phe	Lys	Val	Leu	Val		
	690					695					700						
Lys	Met	Thr	Ala	Gln	Glu	Leu	Ala	Asn	Gly	Ile	Pro	Asp	Ser	Gly	His		
705					710					715					720		
Leu	Tyr	Ala	Ser	Ile	Arg	Ala	Gly	Arg	Thr	Leu	Thr	Pro	Ala	Gly	Asp		
				725					730					735			
Leu	Gln	Glu	Thr	Phe	Ser	Gly	Met	Asp	Gln	Val	Arg	Leu	Met	Lys	Arg		
			740					745					750				
Ile	Ala	Glu	Met	Thr	Asp	Ile	Lys	Pro	Ile	Leu	Arg	Lys	Leu	Pro	Arg		
	755						760						765				
Ile	Lys	Lys	His	Leu	Leu	Asn	Gly	Asp	Asn	Met	Arg	Cys	Ser	Val	Asn		
	770					775					780						
Ala	Thr	Pro	Gln	Gln	Met	Pro	Gln	Thr	Glu	Lys	Ala	Val	Glu	Asp	Phe		
785					790				795					800			

Leu	Arg	Ser	Ile	Gly	Arg	Ser	Lys	Lys	Glu	Arg	Arg	Pro	Val	Arg	Pro
				805					810					815	
His	Thr	Val	Glu	Lys	Pro	Val	Pro	Ser	Ser	Ser	Gly	Gly	Asp	Ala	His
			820					825					830		
Val	Pro	His	Gly	Ser	Gln	Val	Ile	Arg	Lys	Leu	Val	Met	Glu	Pro	Thr
			835				840					845			
Phe	Lys	Pro	Trp	Gln	Met	Lys	Thr	His	Phe	Leu	Met	Pro	Phe	Pro	Val
	850					855					860				
Asn	Tyr	Val	Gly	Glu	Cys	Ile	Arg	Thr	Val	Pro	Tyr	Thr	Asp	Pro	Asp
865					870					875				880	
His	Ala	Ser	Leu	Lys	Ile	Leu	Ala	Arg	Leu	Met	Thr	Ala	Lys	Phe	Leu
				885					890					895	
His	Thr	Glu	Ile	Arg	Glu	Lys	Gly	Gly	Ala	Tyr	Gly	Gly	Xaa	Ala	Lys
			900					905					910		
Leu	Ser	His	Asn	Gly	Ile	Phe	Thr	Leu	Tyr	Ser	Tyr	Arg	Asp	Pro	Asn
		915					920					925			
Thr	Ile	Glu	Thr	Leu	Gln	Ser	Phe	Gly	Lys	Ala	Val	Asp	Trp	Ala	Lys
	930				935						940				
Ser	Gly	Lys	Phe	Thr	Gln	Gln	Asp	Ile	Asp	Glu	Ala	Lys	Leu	Ser	Val
945					950					955				960	
Phe	Ser	Thr	Val	Asp	Ala	Pro	Val	Ala	Pro	Ser	Asp	Lys	Gly	Met	Asp
				965					970					975	
His	Phe	Leu	Tyr	Gly	Leu	Ser	Asp	Glu	Met	Lys	Gln	Ala	His	Arg	Glu
			980					985					990		
Gln	Leu	Phe	Ala	Val	Ser	His	Asp	Lys	Leu	Leu	Ala	Val	Ser	Asp	Arg
		995					1000					1005			
Tyr	Leu	Gly	Thr	Gly	Lys	Ser	Thr	His	Gly	Leu	Ala	Ile	Leu	Gly	Pro
	1010					1015					1020				
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<210> 77

<211> 2026

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (49)...(1737)

<400> 77

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Glu Pro Gly Gly Cys Cys Cys Arg Arg Thr Val Arg Ala Asn Gly Cys															
5 10 15															
gtg gcg aac ggg gaa gta cgg aac ggg tac gtg agg agc agc gct gca															153
Val Ala Asn Gly Glu Val Arg Asn Gly Tyr Val Arg Ser Ser Ala Ala															
20 25 30 35															
gcc gca gcc gca gcc gcc gcc ggc cag atc cat cat gtt aca caa aat															201
Ala Ala Ala Ala Ala Ala Ala Gly Gln Ile His His Val Thr Gln Asn															
40 45 50															
gga gga cta tat aaa aga ccg ttt aat gaa gct ttt gaa gaa aca cca															249
Gly Gly Leu Tyr Lys Arg Pro Phe Asn Glu Ala Phe Glu Glu Thr Pro															
55 60 65															

atg	ctg	gtt	gct	gtg	ctc	acg	tat	gtg	ggg	tat	ggc	gta	ctc	acc	ctc	297
Met	Leu	Val	Ala	Val	Leu	Thr	Tyr	Val	Gly	Tyr	Gly	Val	Leu	Thr	Leu	
		70					75					80				
ttt	gga	tat	ctt	cga	gat	ttc	ttg	agg	tat	tgg	aga	att	gaa	aag	tgt	345
Phe	Gly	Tyr	Leu	Arg	Asp	Phe	Leu	Arg	Tyr	Trp	Arg	Ile	Glu	Lys	Cys	
	85					90					95					
cac	cat	gca	aca	gaa	aga	gaa	gaa	caa	aag	gac	ttt	gtg	tca	ttg	tat	393
His	His	Ala	Thr	Glu	Arg	Glu	Glu	Gln	Lys	Asp	Phe	Val	Ser	Leu	Tyr	
100					105					110					115	
caa	gat	ttt	gaa	aac	ttt	tat	aca	agg	aat	ctg	tac	atg	agg	ata	aga	441
Gln	Asp	Phe	Glu	Asn	Phe	Tyr	Thr	Arg	Asn	Leu	Tyr	Met	Arg	Ile	Arg	
				120					125					130		
gac	aac	tgg	aat	cgg	cca	atc	tgt	agt	gtg	cct	gga	gcc	agg	gtg	gac	489
Asp	Asn	Trp	Asn	Arg	Pro	Ile	Cys	Ser	Val	Pro	Gly	Ala	Arg	Val	Asp	
			135					140					145			
atc	atg	gag	aga	cag	tct	cat	gat	tat	aac	tgg	tcc	ttc	aag	tat	aca	537
Ile	Met	Glu	Arg	Gln	Ser	His	Asp	Tyr	Asn	Trp	Ser	Phe	Lys	Tyr	Thr	
		150					155					160				
ggg	aat	ata	ata	aag	ggg	gtt	ata	aac	atg	ggg	tcc	tac	aac	tat	ctt	585
Gly	Asn	Ile	Ile	Lys	Gly	Val	Ile	Asn	Met	Gly	Ser	Tyr	Asn	Tyr	Leu	
	165					170					175					
gga	ttt	gca	cgg	aat	act	gga	tca	tgt	caa	gaa	gca	gcc	gcc	aaa	gtc	633
Gly	Phe	Ala	Arg	Asn	Thr	Gly	Ser	Cys	Gln	Glu	Ala	Ala	Ala	Lys	Val	
180					185					190					195	
ctt	gag	gag	tat	gga	gct	gga	gtg	tgc	agt	act	cgg	cag	gaa	att	gga	681
Leu	Glu	Glu	Tyr	Gly	Ala	Gly	Val	Cys	Ser	Thr	Arg	Gln	Glu	Ile	Gly	
				200					205					210		
aac	ctg	gac	aag	cat	gaa	gaa	cta	gag	gag	ctt	gta	gca	agg	ttc	tta	729
Asn	Leu	Asp	Lys	His	Glu	Glu	Leu	Glu	Glu	Leu	Val	Ala	Arg	Phe	Leu	
			215					220					225			
gga	gta	gaa	gct	gct	atg	gcg	tat	ggc	atg	gga	ttt	gca	acg	aat	tca	777
Gly	Val	Glu	Ala	Ala	Met	Ala	Tyr	Gly	Met	Gly	Phe	Ala	Thr	Asn	Ser	
		230				235						240				
atg	aac	att	cct	gct	ctt	gtt	ggc	aaa	ggg	tgc	ctg	att	ctg	agt	gat	825
Met	Asn	Ile	Pro	Ala	Leu	Val	Gly	Lys	Gly	Cys	Leu	Ile	Leu	Ser	Asp	
	245					250					255					
gaa	ctg	aac	cat	gca	tca	ctg	gtt	ctg	gga	gcc	aga	ctg	tca	gga	gca	873
Glu	Leu	Asn	His	Ala	Ser	Leu	Val	Leu	Gly	Ala	Arg	Leu	Ser	Gly	Ala	
260					265					270					275	
acc	att	aga	atc	ttc	aaa	cac	aac	aat	atg	caa	agc	cta	gag	aag	cta	921
Thr	Ile	Arg	Ile	Phe	Lys	His	Asn	Asn	Met	Gln	Ser	Leu	Glu	Lys	Leu	
				280					285					290		
ttg	aaa	gat	gcc	att	gtt	tat	ggg	cag	cct	cgg	aca	cga	agg	ccc	tgg	969
Leu	Lys	Asp	Ala	Ile	Val	Tyr	Gly	Gln	Pro	Arg	Thr	Arg	Arg	Pro	Trp	
			295					300					305			



aag aaa att ctc atc ctt gtg gaa gga ata tat agc atg gag gga tct	1017
Lys Lys Ile Leu Ile Leu Val Glu Gly Ile Tyr Ser Met Glu Gly Ser	
310 315 320	
att gtt cgt ctt cct gaa gtg att gcc ctc aag aag aaa tac aag gca	1065
Ile Val Arg Leu Pro Glu Val Ile Ala Leu Lys Lys Lys Tyr Lys Ala	
325 330 335	
tac ttg tat ctg gat gag gct cac agc att ggc gcc ctg ggc ccc aca	1113
Tyr Leu Tyr Leu Asp Glu Ala His Ser Ile Gly Ala Leu Gly Pro Thr	
340 345 350 355	
ggc cgg ggt gtg gtg gag tac ttt ggc ctg gat ccc gag gat gtg gat	1161
Gly Arg Gly Val Val Glu Tyr Phe Gly Leu Asp Pro Glu Asp Val Asp	
360 365 370	
gtt atg atg gga acg ttc aca aag agt ttt ggt gct tct gga gga tat	1209
Val Met Met Gly Thr Phe Thr Lys Ser Phe Gly Ala Ser Gly Gly Tyr	
375 380 385	
att gga ggc aag aag gag ctg ata gac tac ctg cga aca cat tct cat	1257
Ile Gly Gly Lys Lys Glu Leu Ile Asp Tyr Leu Arg Thr His Ser His	
390 395 400	
agt gca gtg tat gcc acg tca ttg tca cct cct gta gtg gag cag atc	1305
Ser Ala Val Tyr Ala Thr Ser Leu Ser Pro Pro Val Val Glu Gln Ile	
405 410 415	
atc acc tcc atg aag tgc atc atg ggg cag gat ggc acc agc ctt ggt	1353
Ile Thr Ser Met Lys Cys Ile Met Gly Gln Asp Gly Thr Ser Leu Gly	
420 425 430 435	
aaa gag tgt gta caa cag tta gct gaa aac acc agg tat ttc agg aga	1401
Lys Glu Cys Val Gln Gln Leu Ala Glu Asn Thr Arg Tyr Phe Arg Arg	
440 445 450	
cgc ctg aaa gag atg ggc ttc atc atc tat gga aat gaa gac tct cca	1449
Arg Leu Lys Glu Met Gly Phe Ile Ile Tyr Gly Asn Glu Asp Ser Pro	
455 460 465	
gta gtg cct ttg atg ctc tac atg cct gcc aaa att ggc gcc ttt gga	1497
Val Val Pro Leu Met Leu Tyr Met Pro Ala Lys Ile Gly Ala Phe Gly	
470 475 480	
cgg gag atg ctg aag cgg aac atc ggt gtc gtt gtg gtt gga ttt cct	1545
Arg Glu Met Leu Lys Arg Asn Ile Gly Val Val Val Val Gly Phe Pro	
485 490 495	
gcc acc cca att att gag tcc aga gcc agg ttt tgc ctg tca gca gct	1593
Ala Thr Pro Ile Ile Glu Ser Arg Ala Arg Phe Cys Leu Ser Ala Ala	
500 505 510 515	
cat acc aaa gaa ata ctt gat act gct tta aag gag ata gat gaa gtt	1641
His Thr Lys Glu Ile Leu Asp Thr Ala Leu Lys Glu Ile Asp Glu Val	
520 525 530	
ggg gac cta ttg cag ctg aag tat tcc cgt cat cgg ttg gta cct cta	1689
Gly Asp Leu Leu Gln Leu Lys Tyr Ser Arg His Arg Leu Val Pro Leu	
535 540 545	
ctg gac agg ccc ttt gac gag acg acg tat gaa gaa aca gaa gac tga	1737

Leu Asp Arg Pro Phe Asp Glu Thr Thr Tyr Glu Glu Thr Glu Asp \*  
 550 555 560

gccttggttg tgctccctca gaggaactct ccctcaccca ggacagcctg tggcctttgt 1797  
 gagccagttc caggaaccac acttctgtgg ccctctcacg tgaaagacat tgcctcagct 1857  
 actgaagggtg gccacctcca ctctaaatga cattttgtaa atagtaaaaa actgcttcta 1917  
 atccttcctt tgctaaatct cacctttaa aacgaagggtg actcactttg ctttttcagt 1977  
 ccattaataaa aacattttat tttgcaacca aaaaaaaaaa aaaaaaaaaa 2026

<210> 78  
 <211> 562  
 <212> PRT  
 <213> Homo sapiens

<400> 78  
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 Ser Ala Ala Ala Ala Ala Ala Ala Gly Gln Ile His His Val  
 35 40 45  
 Thr Gln Asn Gly Gly Leu Tyr Lys Arg Pro Phe Asn Glu Ala Phe Glu  
 50 55 60  
 Glu Thr Pro Met Leu Val Ala Val Leu Thr Tyr Val Gly Tyr Gly Val  
 65 70 75 80  
 Leu Thr Leu Phe Gly Tyr Leu Arg Asp Phe Leu Arg Tyr Trp Arg Ile  
 85 90 95  
 Glu Lys Cys His His Ala Thr Glu Arg Glu Glu Gln Lys Asp Phe Val  
 100 105 110  
 Ser Leu Tyr Gln Asp Phe Glu Asn Phe Tyr Thr Arg Asn Leu Tyr Met  
 115 120 125  
 Arg Ile Arg Asp Asn Trp Asn Arg Pro Ile Cys Ser Val Pro Gly Ala  
 130 135 140  
 Arg Val Asp Ile Met Glu Arg Gln Ser His Asp Tyr Asn Trp Ser Phe  
 145 150 155 160  
 Lys Tyr Thr Gly Asn Ile Ile Lys Gly Val Ile Asn Met Gly Ser Tyr  
 165 170 175  
 Asn Tyr Leu Gly Phe Ala Arg Asn Thr Gly Ser Cys Gln Glu Ala Ala  
 180 185 190  
 Ala Lys Val Leu Glu Glu Tyr Gly Ala Gly Val Cys Ser Thr Arg Gln  
 195 200 205  
 Glu Ile Gly Asn Leu Asp Lys His Glu Glu Leu Glu Glu Leu Val Ala  
 210 215 220  
 Arg Phe Leu Gly Val Glu Ala Ala Met Ala Tyr Gly Met Gly Phe Ala  
 225 230 235 240  
 Thr Asn Ser Met Asn Ile Pro Ala Leu Val Gly Lys Gly Cys Leu Ile  
 245 250 255  
 Leu Ser Asp Glu Leu Asn His Ala Ser Leu Val Leu Gly Ala Arg Leu  
 260 265 270  
 Ser Gly Ala Thr Ile Arg Ile Phe Lys His Asn Asn Met Gln Ser Leu  
 275 280 285  
 Glu Lys Leu Leu Lys Asp Ala Ile Val Tyr Gly Gln Pro Arg Thr Arg  
 290 295 300  
 Arg Pro Trp Lys Lys Ile Leu Ile Leu Val Glu Gly Ile Tyr Ser Met  
 305 310 315 320  
 Glu Gly Ser Ile Val Arg Leu Pro Glu Val Ile Ala Leu Lys Lys Lys  
 325 330 335  
 Tyr Lys Ala Tyr Leu Tyr Leu Asp Glu Ala His Ser Ile Gly Ala Leu  
 340 345 350  
 Gly Pro Thr Gly Arg Gly Val Val Glu Tyr Phe Gly Leu Asp Pro Glu  
 355 360 365

Asp	Val	Asp	Val	Met	Met	Gly	Thr	Phe	Thr	Lys	Ser	Phe	Gly	Ala	Ser
370						375					380				
Gly	Gly	Tyr	Ile	Gly	Gly	Lys	Lys	Glu	Leu	Ile	Asp	Tyr	Leu	Arg	Thr
385					390					395					400
His	Ser	His	Ser	Ala	Val	Tyr	Ala	Thr	Ser	Leu	Ser	Pro	Pro	Val	Val
				405					410					415	
Glu	Gln	Ile	Ile	Thr	Ser	Met	Lys	Cys	Ile	Met	Gly	Gln	Asp	Gly	Thr
				420				425					430		
Ser	Leu	Gly	Lys	Glu	Cys	Val	Gln	Gln	Leu	Ala	Glu	Asn	Thr	Arg	Tyr
		435					440					445			
Phe	Arg	Arg	Arg	Leu	Lys	Glu	Met	Gly	Phe	Ile	Ile	Tyr	Gly	Asn	Glu
						455						460			
Asp	Ser	Pro	Val	Val	Pro	Leu	Met	Leu	Tyr	Met	Pro	Ala	Lys	Ile	Gly
465					470					475					480
Ala	Phe	Gly	Arg	Glu	Met	Leu	Lys	Arg	Asn	Ile	Gly	Val	Val	Val	Val
				485					490					495	
Gly	Phe	Pro	Ala	Thr	Pro	Ile	Ile	Glu	Ser	Arg	Ala	Arg	Phe	Cys	Leu
				500				505					510		
Ser	Ala	Ala	His	Thr	Lys	Glu	Ile	Leu	Asp	Thr	Ala	Leu	Lys	Glu	Ile
		515					520					525			
Asp	Glu	Val	Gly	Asp	Leu	Leu	Gln	Leu	Lys	Tyr	Ser	Arg	His	Arg	Leu
		530				535					540				
Val	Pro	Leu	Leu	Asp	Arg	Pro	Phe	Asp	Glu	Thr	Thr	Tyr	Glu	Glu	Thr
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Glu	Asp														

<210> 79  
 <211> 2346  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (358)...(1506)

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 cccggatgat ctgagccgag agggcgccga cagccggggg cccggacgca gcccggctcc 180  
 tcccctctc cgcccttcc ccagcctgac ctggcccgcc gctgcagcgg tgaccctcc 240  
 cccggctgcc gccgtcgcc cgcggtgac cccctccccg gctgccgcc cgccgcctc 300  
 ggccgaccag ggacctgccc gctgcggct gctccggacc tagaggatca agacata atg 360  
 Met  
 1

gga gca ttt tta gac aag cca aag atg gaa aag cat aat gcc cag ggg 408  
 Gly Ala Phe Leu Asp Lys Pro Lys Met Glu Lys His Asn Ala Gln Gly  
 5 10 15

cag ggt aat ggg ttg cga tat ggg cta agc agc atg caa ggc tgg cgt 456  
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Lys Asn Gly Ile Arg Thr Gly Phe Leu Glu Ile Asp Glu His Met Arg		100		105		110	
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Val Met Ser Glu Lys Lys His Gly Ala Asp Arg Ser Gly Ser Thr Ala		115		120		125	
gta ggt gtc tta att tct ccc caa cat act tat ttc att aac tgt gga	792						
Val Gly Val Leu Ile Ser Pro Gln His Thr Tyr Phe Ile Asn Cys Gly		130		135		140	145
gac tca aga ggt tta ctt tgt agg aac agg aaa gtt cat ttc ttc aca	840						
Asp Ser Arg Gly Leu Leu Cys Arg Asn Arg Lys Val His Phe Phe Thr		150		155		160	
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Gln Asp His Lys Pro Ser Asn Pro Leu Glu Lys Glu Arg Ile Gln Asn		165		170		175	
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tcg agg gcc ctt ggg gat ttt gat tac aaa tgt gtc cat gga aaa ggt	984						
Ser Arg Ala Leu Gly Asp Phe Asp Tyr Lys Cys Val His Gly Lys Gly		195		200		205	
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Pro Thr Glu Gln Leu Val Ser Pro Glu Pro Glu Val His Asp Ile Glu		210		215		220	225
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Arg Ser Glu Glu Asp Asp Gln Phe Ile Ile Leu Ala Cys Asp Gly Ile		230		235		240	
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Cys Phe Pro Asn Ala Pro Lys Val Ser Pro Glu Ala Val Lys Lys Glu		290		295		300	305

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Ser Gln Val Ala Lys Tyr Cys Cys Glu His Leu Leu Asp His Ile Thr  
65 70 75 80  
Asn Asn Gln Asp Phe Lys Gly Ser Ala Gly Ala Pro Ser Val Glu Asn  
85 90 95  
Val Lys Asn Gly Ile Arg Thr Gly Phe Leu Glu Ile Asp Glu His Met  
100 105 110  
Arg Val Met Ser Glu Lys Lys His Gly Ala Asp Arg Ser Gly Ser Thr  
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Ala Val Gly Val Leu Ile Ser Pro Gln His Thr Tyr Phe Ile Asn Cys  
130 135 140

Gly	Asp	Ser	Arg	Gly	Leu	Leu	Cys	Arg	Asn	Arg	Lys	Val	His	Phe	Phe
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Thr	Gln	Asp	His	Lys	Pro	Ser	Asn	Pro	Leu	Glu	Lys	Glu	Arg	Ile	Gln
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Asn	Ala	Gly	Gly	Ser	Val	Met	Ile	Gln	Arg	Val	Asn	Gly	Ser	Leu	Ala
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Arg	Leu	Glu	Val	Thr	Asp	Asp	Leu	Glu	Lys	Val	Cys	Asn	Glu	Val	Val
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Asp	Thr	Cys	Leu	Tyr	Lys	Gly	Ser	Arg	Asp	Asn	Met	Ser	Val	Ile	Leu
		275					280					285			
Ile	Cys	Phe	Pro	Asn	Ala	Pro	Lys	Val	Ser	Pro	Glu	Ala	Val	Lys	Lys
	290					295					300				
Glu	Ala	Glu	Leu	Asp	Lys	Tyr	Leu	Glu	Cys	Arg	Val	Glu	Glu	Ile	Ile
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Lys	Lys	Gln	Gly	Glu	Gly	Val	Pro	Asp	Leu	Val	His	Val	Met	Arg	Thr
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Leu	Ala	Ser	Glu	Asn	Ile	Pro	Ser	Leu	Pro	Pro	Gly	Gly	Glu	Leu	Ala
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Lys	Asn	Asp	Asp	Thr	Asp	Ser	Thr	Ser	Thr	Asp	Asp	Met	Trp		
	370					375					380				

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